

INTERNATIONAL TROPICAL TIMBER ORGANIZATION

ITTO

PROJECT PROPOSAL

| | |
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| TITLE | MODEL CAPACITY BUILDING FOR EFFICIENT AND SUSTAINABLE UTILIZATION OF BAMBOO RESOURCES IN INDONESIA |
| SERIAL NUMBER | PD 600/11 Rev.1 (I) |
| COMMITTEE | FOREST INDUSTRY |
| SUBMITTED BY | GOVERNMENT OF INDONESIA |
| ORIGINAL LANGUAGE | ENGLISH |

SUMMARY

Indonesia is blessed with a vast bamboo resource, around 2.1 million in extent. The resource grows on both private and state forest lands in nearly all provinces of the country. This resource has a great potential contribution to achieving sustainable forest management when it is optimally and efficiently utilized for producing substitutes for wood products and increasing income of rural population. This resource, however, has been under-utilized to date mainly due to the lack of capacity in bamboo utilization. The proposed project is aimed at **initiating enhancement of national capacity** in bamboo industry development through development of model capacity building in Bali. The expected outputs of the project are: i) promoted investment in bamboo industry; ii) enhanced institutional framework for bamboo industry development; and iii) **increased participation of local communities in bamboo industry development.** The basic notion underlying the project design is that increased rate of utilization of bamboo resource should increase availability of substitutes for wood products and augment income of the poor thus lessen pressure on forest resources; and that increased utilization can only be achieved and sustained through enhanced capacity in both bamboo resource-base development and in efficient utilization of the resource.

EXECUTING AGENCY Directorate General of Watershed Management and Social Forestry (DGWMSF), Ministry of Forestry in collaboration with Bangli District Forestry Agency (BDFA)

COOPERATING GOVERNMENTS ---

DURATION 36 MONTHS

APPROXIMATE STARTING DATE TO BE DETERMINED

| BUDGET AND PROPOSED SOURCE OF FINANCE | Source | Contribution in US\$ |
|---------------------------------------|-------------------------|----------------------|
| | ITTO | 537,095 |
| | Government of Indonesia | 334,937 |
| | Total | 872,032 |

Project Brief

Indonesia is blessed with a vast bamboo resource that occupies state and community lands in most provinces of the country. The estimate made by the Ministry of Forestry in 2005 indicated that the total area of bamboo forest was around 2.1 million Ha, 0.69 million Ha on state forest lands and 1.41 million Ha on private/community lands. This resource, however, has not been underutilized. Total export value of bamboo products in 2007 was only in the order of US\$ 90 million, less than four percent of the world trade value.

The discussions held with main stakeholders revealed that the low rate of bamboo resource utilization is primarily caused by the lack of capacity in utilization. Therefore, to optimally utilize available bamboo resource, it is inevitable that capacity in utilization significantly enhanced. The key problem to be addressed by proposed project is therefore “weak capacity in bamboo resource development and utilization”.

The development objective of the project is to improve the management utilization of bamboo resources for their sustainable use and benefits to local communities. Its specific objective is to initiate enhancement of capacity among stakeholders to develop and utilize bamboo resources in an efficient and sustainable manner. The expected outputs of the project are i) promoted investment in bamboo industry development; ii) enhanced institutional framework and increased participation of local communities.

The primary beneficiaries of the project are local communities, local investors and Bangli District Government. Enhanced capacity in bamboo resource development and utilization will be achieved by delivering three project outputs namely increased investment by local investors, enhanced institutional framework on bamboo resource management and increased skills on bamboo industry development.

The project will be implemented using participatory approach wherein the Executing Agency will be working closely with the collaborating agency, local government, district government authorities, NGOs, R&D Institutions, and universities in implementing project activities, as appropriate; Competent stakeholders will be appointed to execute the various planned activities in accordance with their respective expertise; Moreover, a stakeholder consultation forum will be established to facilitate exchange of information, views and initiatives amongst stakeholders.

Elements of the strategy to be pursued include dissemination of quality information to promote interest and investment, training on bamboo industry development, establishment of stakeholder consultation forum, enhancement of institutional framework, sustainability securing measures and development of operations monitoring system.

The project has been designed as a model of capacity building for bamboo industry development. The Bangli District Forestry Agency is the collaborating agency. It is therefore expected that the project will be managed by the district government using its own resources after its completion and at a later stage it becomes a self-contained entity. Many practitioners and farmers, from Bali and other provinces of Indonesia as well, will be trained on the various aspects of bamboo industry development. Knowledge and skills learned by these trainees should also contribute to sustainability of project results; such knowledge and skills will allow the trainees to deal with bamboo industry related activities to increase their income which in turn will strengthen their commitment on bamboo industry development.

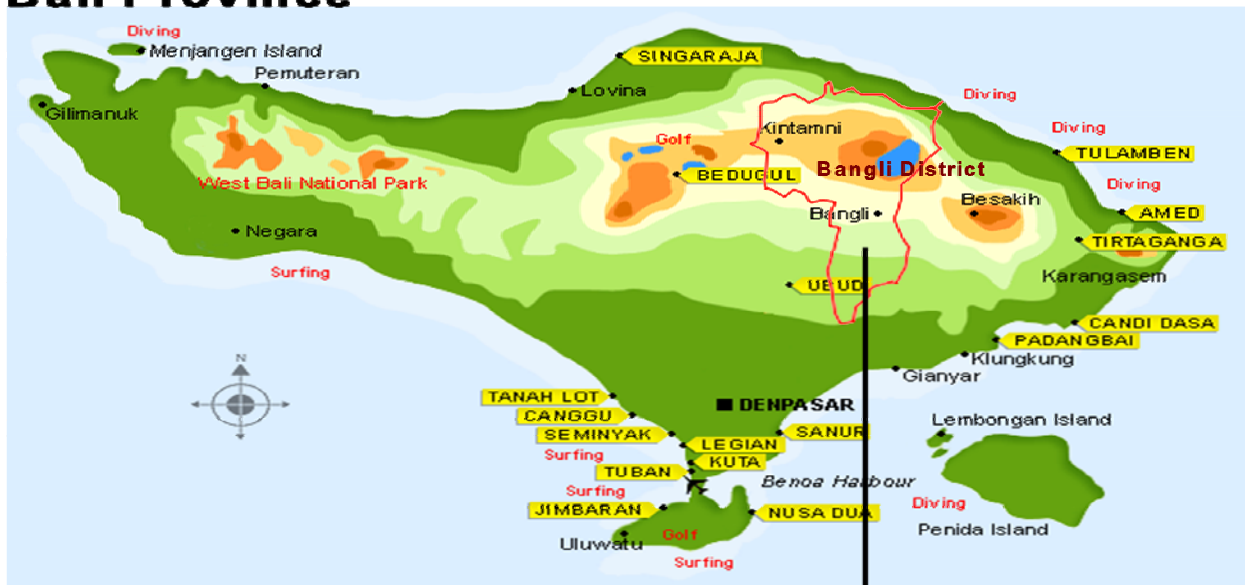
The key assumptions made include: i) professionals on bamboo industry development are available in terms of number and timing, ii) continued support by government authorities, and iii) interest of stakeholders in bamboo industry development is growing. The concomitant main risks are therefore unavailability of needed professionals in time, weakening support by concerned government authorities and low interest of stakeholders in bamboo industry development. The envisaged mitigating measures, are: i) early communication by the Executing Agency with competent institutions and individual professionals, ii) wide dissemination of information through workshops, dialogues and discussions

involving government authorities, and iii) launching of national campaign on bamboo industry development and formation of stakeholder consultation forum.

The amount of project budget proposed is **US\$ 872,032**, comprising **US\$ 537,095** contribution of ITTO and **US\$ 334,937** contribution of GOI. The ITTO funds are allocated **21.93 percent** to personnel and **16.57 percent** to capital items.

Map of project area

Bali Province



Bangli District

- Planned Demo Plots
- Processing Plant

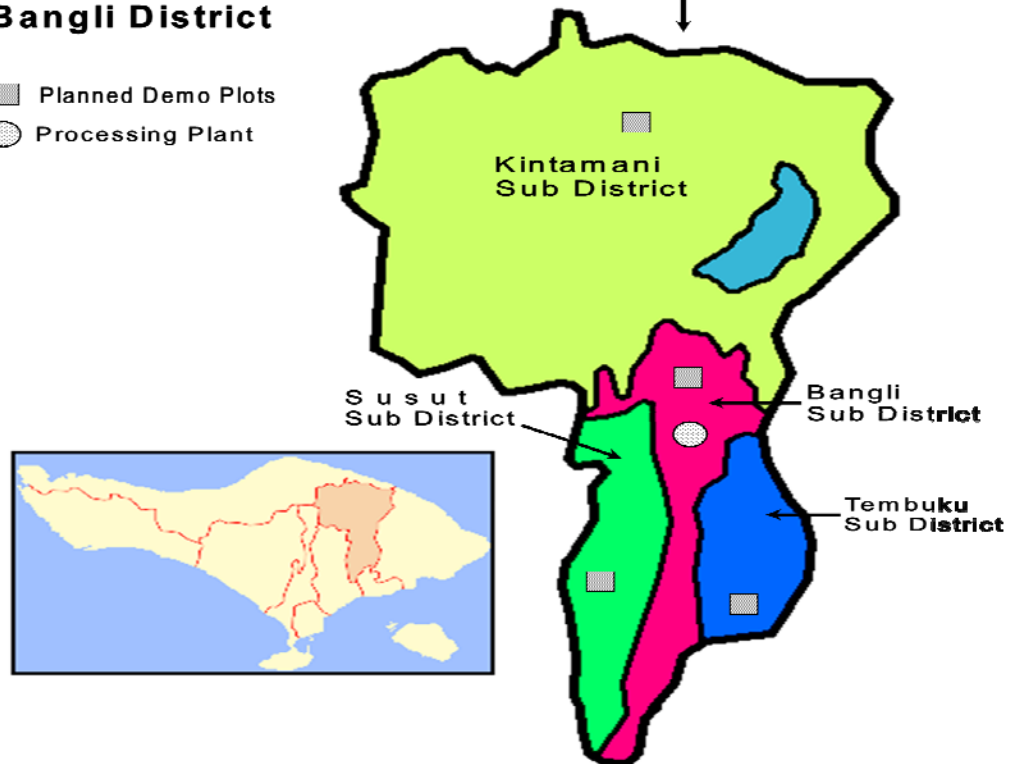


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List of Abbreviation and Acronym

| | |
|--------|---|
| BDFA | Bangli District Forestry Agency |
| BDIA | Bangli District Industry Agency |
| BDTT | Bangli District Trade Agency |
| CA | Collaborating Agency |
| CSE | Community Small Enterprise |
| DGWMSF | Directorate General of Watershed Management and Social Forestry (formerly, DGLRSF: Directorate General of Land Rehabilitation and Social Forestry) |
| EA | Executing Agency |
| FS | Field Supervisor |
| FORDA | Forestry Research and Development Agency of the Ministry of Forestry |
| IC | International Consultant |
| LG | Local Government |
| NC | National Consultant |
| NGO | Non-government Organizations |
| PA | Project Account |
| PC | Project Coordinator |
| PEO | Professional Event Organizer |
| PS | Project Secretary |
| PSC | Project Steering Committee |
| PT | Professional Trainer |
| PTC | Project Technical Committee |
| SHF | Stakeholder Forum |
| UNIDO | United Nations Industrial Development Organization |

Part 1: Project Context

1.1. Origin

During the last two decades, bamboo has developed as an exceptionally valuable substitute for wood. Bamboo may replace wood in many industrial applications and thereby contribute to the saving and restoration of tropical forests. Bamboo is a major construction material in Indonesia particularly in rural areas. It can be used for almost all parts of houses, including posts, roofs, walls, floors, beams, trusses and fences. People also have for decades used bamboo to produce mats, baskets, tools, handles, hats, toys, musical instruments and furniture. In the food sector, bamboo shoots are becoming more popular. Indeed, bamboo has a tremendous potential for socio-economic and environmental development and international trade.

Indonesia is blessed with a vast bamboo resource that occupies state and community lands all over the country. Reliable data on the extent, growing stock and distribution of bamboo forests are not available. The estimate made by the Ministry of Forestry in 2005 indicated that the total area of bamboo forest was around 2.10 million Ha, 0.69 million Ha on state forest lands and 1.41 million Ha on private/community lands (in Global Forest Resources Assessment Update, FAO, 2005). The figures may still picture well the today's actual area because deforestation process and illegal logging occur primarily on forest resource, utilization rate of bamboo resource has remained low and most existing bamboo species are fast growing.

Despite the potential of bamboo for socio-economic development, available bamboo resource has not been utilized optimally. Total export value of bamboo products was only around USD 94 million in 2007, less than 4 percent of the world trade value and only 20 percent of the total export value of rattan products (DGWMSF, 2010).

Realizing the potential of bamboo resource for rural development and poverty alleviation, the Ministry of Forestry has taken strategic steps for bamboo industry development through the issuance of three ministerial decrees and one executive decision. The first decree, No. P35 of 2007, specifies 557 species of flora and fauna comprising nine groups of non-wood forest products that fall under the Ministry's administration, one of which is bamboo group products; the second decree, No. P19 of 2009, defines the basic strategy for bamboo industry development to be pursued at the national level; the third decree, No. P21 of 2009, spells out the criteria and indicators for prioritizing NWFP species for development; and executive decision of DGWMSF No. SK22 of 2010 identifies bamboo as the prime commodity for development first in Bangli District of Bali and further nationwide.

This proposed project is the initiative of DGWMSF and is a concrete follow up action to the executive decision No. SK 22 of 2010. It is also consistent with the recommendation of the ITTO Technical Mission to Indonesia (2001) that Indonesia needs to develop special measures for dealing with promotion of non-wood forest products to support sustainable forest management. **The proposed project will be complementing other government actions on bamboo industry development. The actions taken to implement the aforementioned ministerial decrees include:**

- **Planting of app. 20 Ha of four high-valued species of bamboo in Sleman district of Yogyakarta on community lands in collaboration with local communities.**
- **Initiating cooperation between FORDA and ICBR of China in bamboo resource research and development encompassing conservation and utilization of bamboo germplasm, cultivation and ecological utilization of bio-resource, bio-engineering, bio-industry, etc; a MOU on the cooperation is yet to be signed.**
- **Establishing cooperation between the Ministry of Forestry with UNIDO in development of around 300 Ha of bamboo plantation in Bali for sustainable raw material supply for bamboo industries and utilization of biomass waste for power generation on experimental basis; a MOU on the cooperation is yet to be signed.**

1.2. Relevance

1.2.1. Conformity with ITTO's objectives and priorities

Bamboo resources are mostly distributed in rural areas both on state and community lands. The project is aimed to increase utilization of bamboo resources with participation of local communities, mostly are the poor. Increased utilization of bamboo with the participation of local communities is expected to contribute significantly to augmenting income of the poor in a sustainable manner. Therefore, proposed project is consistent with Objective c of ITTA 2006 "contributing to sustainable development and to poverty alleviation".

Under the proposed project, local communities and business sector will be trained on how to develop and manage bamboo resources and utilize them in an efficient and sustainable manner. Thus the project will enhance the capacity to conserve as well as increase value of bamboo resources, which is in agreement with Objective f of ITTA 2006 "... increasing the capacity to conserve and enhance other forest values in timber producing tropical forests".

The proposed project deals with capacity building for increased utilization of bamboo resources in an efficient and sustainable manner. Increased utilization is expected to yield a variety of bamboo products that can serve as substitutes for wood products. At the same time, income of local people will be increased through their involvement in various utilization activities. In this manner, local people are provided with alternative viable source of income and divert their dependence on forest resource as source of livelihood. Moreover, bamboo species can be used in rehabilitation of degraded land in rural area as local people are already familiar with bamboo planting activities. In this light, the project can be expected to contribute to restoring degraded lands, reducing pressures on forest resources thus contributing to sustainable management of tropical forest as stipulated in Objective q of ITTA 2006 "promoting better understanding of non-timber forest products and environmental services to the sustainable management of tropical forest ...".

The proposed project is also in conformity with the ITTO Action Plan 2008-2011 as follows:

- Expected outcome 1: Increased production and further processing of tropical timber and other forest products from sustainably managed and legally harvested sources.
 - The project will demonstrate on how to apply appropriate processing technologies to produce different kinds of bamboo products. Moreover, the project will show case how to plant selected bamboo species having high commercial value in order to avoid depleting bamboo resources.
 - The project will also train local people on how to form and manage small business enterprises or cooperatives dealing with utilization and conservation of bamboo resources;
 - The project will establish demonstration plots of bamboo plantation and bamboo processing unit where interested villagers, investors and civil servants will be trained.
- Cross-cutting actions
 - The project will deal with demonstration activities both in processing and bamboo planting as well as with exchange visits thus consistent with Item e of the "communication and outreach".
 - The project will conduct local, national, regional and international training on bamboo resources utilization and development thus consistent with Item k of the "capacity building".
- ITTO Biennial Work Programme for the years 2010-2011
This project aims to promote development and utilization of bamboo resources in Indonesia. This aim is obviously consistent with Activity No. 38 of the existing ITTO Biennial Programme "promoting roles of non-timber forest products (NTFPs) and services for sustainable forest management and improved livelihood in tropical countries".

1.2.2. Relevance to Indonesia's policies

The Ministry of Forestry has launched eight priority programs on national forestry development for the 2010-2014 periods as follows:

- a. Consolidation of permanent forest estate
- b. Forest rehabilitation and improvement of watershed carrying capacity
- c. Forest security and control of forest fires
- d. Biodiversity conservation
- e. Revitalization of forest utilization and forest industries
- f. Empowerment of forest local communities
- g. Mitigation and adaptation of climate change, and
- h. Strengthening of forestry institutions.

The project is aimed at developing and utilizing bamboo resources through execution of the various activities to deliver outputs and achieve its intended objectives. The project will pilot plant high-value species on degraded land which directly supports above Programs b and c. Through the training activities, local communities will be empowered to participate in bamboo resource development and utilization and augment their income which in turn should reduce dependence on forest resources; therefore, the project is consistent with Programs c and f. Promotion of investment and training on utilization are evidently in agreement with Program f while development of bamboo management regime, formation of stakeholder consultative forum and coordination amongst authorities of different sectors are in fact activities relevant with Program h.

The Ministry of Forestry through its decree No. P35/2007 has identified 557 non-wood forest products (NWFPs) comprising flora and fauna species or their derivatives that fall under its management; 46 species of bamboo are specified by the decree. Further, Ministerial Decrees No. P19 of 2009 and P21 have declared that bamboo is the prime commodity for development at the national level and that development of bamboo resource is to be undertaken in a cluster fashion. Based on the aforementioned Ministerial decrees, the Director General of Watershed Management and Social Forestry (DGWMSF) has issued Decision No. SK22 of 2010 stating that bamboo resource is to be first developed in Bangli District of the Bali Province under cluster mode of development for replication in other provinces at a later stage, as appropriate. This proposed project is a concrete follow up to the above Decrees and Decision thus consistent with the Ministry of Forestry's policies.

1.3. Target Area

1.3.1. Geographic Location

Physically, the project will be located in Bangli in accordance with DGWMSF's decision No. SK22 of 2010. This project is intended as a capacity building model for bamboo resource development and utilization. Its coverage however, is nationwide as bamboo has been declared as the prime national commodity for development per Ministerial Decrees Nos. P19 and P21 of 2009. In the mid-term, the model is to be replicated in other region(s) of the country with modifications as appropriate. Participants of training on the various aspects of bamboo resource development and utilization will come not only from Bali but also from other interested provinces and districts.

As has been touched upon elsewhere, other ITTO member countries, especially from the Asia-Pacific region, may also get benefits from the project by sending trainees at minimum own costs. Overseas trainees will have the opportunity to learn free of charge on the spot the various aspects of bamboo development and utilization under the guidance of professional trainers free of charge.

The main geographic features of the Bangli District where the project will be located can be summarized as follows:

- The land area of the District is app. 521 Km² in size or around 9.25% of Bali Province. It is located between 08°03'30" – 08°31'37" North latitude and 115°13'48" – 115°27'24" East longitude, lies between 225 and 2152 m above sea level and consists of 4 Sub-Districts and 67 villages.
- The extent of forest land is around 11,536 Ha of which around 20% is community forest. Available data (Bangli District Government, 2009) indicated that the extent of bamboo forest in Bangli was around 6,000 Ha in 2009 which produces over 4 million bamboo culms annually.

1.3.2. Social, cultural, economic and environmental aspects

Social and cultural aspects

- In 2008, the population size of Bangli District was around 214,000 people or a density of 400 persons per km², almost equally distributed between males and females. During the recent years population growth was 0.41 – 0.43% per annum; by religion, majority of people are Hindus.
- Around 60 percent of the people work in the agriculture sector thus there is a need to boost up productivity level of this sector, including forestry, in order to alleviate the poverty.
- Similar to the rest of Bali Island, Bangli District is blessed with superb natural beauty and a dynamic culture dedicated to the deity making it has for decades become the main tourist destination. The very high Balinese culture, rich heritage and craftsmanship have proved as the invaluable asset in the development of home-based handcrafting industry using bamboo or wood as the primary raw material.

Economic aspect

- The member of labor force i.e. persons aging 15 years or more, was around 166,000 in 2008 or approximately 80% of the population of which 138,000 or 83% are employed, i.e. at least work one hour per day during the consecutive days of the reference week. The per capita income in 2008 was IDR 8.6 million or equivalent to app. USD 860.
- The main sources of Gross Regional Domestic Product (GRDP) in 2008 were agriculture (33.4%); trade, hotel and restaurant (23.2%) and manufacturing (8.8%) sectors, respectively.
- Reportedly, around 8,500 people were engaged in bamboo resource utilization in 2008 especially in home-based bamboo handcrafting. The total sale of this industry was estimated at USD 2.5 million mostly in Bali and other domestic markets.

Environmental aspect

- Current land use pattern in Bangli District is rice field (5.5%), yards and dry farming (55.8%), community gardens (4.2%), state forest land (17.9%), crop estates (14.8%) and other uses (1.8%).
- The topography of the area is flat, undulating, hilly and mountainous with the average annual rainfall of 2,638 mm thus continued soil conservation program through planting of trees or bamboos is needed. Bamboo species are suitable for environmental conservation due to its rooting system that can effectively prevent landslides and soil erosion. In addition, bamboo can maintain the balance between oxygen and carbon dioxide in the atmosphere because it generates more oxygen than other trees on average.
- Balinese people are culturally concerned with environment conservation. Their culture has a great respect for the values of all human beings and the nature. The living culture of Balinese includes such ideas as "Tri Hita Karana", meaning "three causes of goodness" which emphasizes three essential harmonies: People – God, People – People, People – Nature; "Desa Kola Patra" or "place, time and situation" which underscores the idea of resilience and adaptation to change while retaining the essential values intact. Therefore, culture is one of the greatest assets for development in Bali. Such a culture will certainly support the balance

between socio-economic development including promotion of bamboo industry and nature conservation.

1.4. Expected outcomes at project completion

The specific objective of the project is to initiate enhancement of capacity among stakeholders to develop and utilize bamboo resources in an efficient and sustainable manner. Enhanced capacity will be achieved through increased investment, improved skills and enhanced institutional framework. Enhanced capacity will have been experienced not only in Bangli District but also in the entire Bali Province as well as other Provinces of Indonesia taking part in the trainings offered under the project.

Enhanced capacity will bring about increased rate of bamboo resource development and utilization. Model plantation established will serve as a model for local communities to imitate in establishing bamboo plantations in other localities on their own lands.

The project will demonstrate efficient techniques for selective cutting of natural stands and management practices for taking care of residual stands. Proven techniques are expected to help sustain bamboo resource-base and also useful for farmers in the management of their own bamboo resources.

As bamboo management regime will have been clearly defined by the government and skillful local people are available, investors will be interested in entering the bamboo industry, processing of bamboo will be growing, and demand for bamboo culms increasing which in turn will serve as a strong incentive for local community to grow bamboo.

The bamboo processing facilities developed under the project will serve as a means for training people on processing techniques and at the same time serves as a model for other communities or investors to imitate as appropriate. The dynamic bamboo utilization will generate job opportunities for rural people in both bamboo resource development and utilization. Certainly, a viable and sustainable source of income for the poor will have been functioning to divert their dependence on forest resource for livelihood.

The training facilities to be developed in Bangli District of Bali will be also open for participants from other ITTO member countries. The readiness of the project to receive trainees from other countries shall be announced through ITTO Secretariat in due time. Indeed, participants from other ITTO member countries should borne their travel expenses themselves. The project will provide only for professional trainers and field training facilities. Therefore, trainees from ITTO member countries will have the opportunity to use the knowledge and skills on bamboo industry development they learned from the project in their respective countries.

Part 2: Project Rationale and Objectives

2.1. Rationale

2.1.1. Institutional set-up and organizational issues

Management of bamboo resources is the domain and responsibility of the Ministry of Forestry. Therefore, the Ministry shall define management objectives and policies on bamboo resource development and utilization. At the provincial and district levels, the Ministry is represented by a technical unit of organization called Office of Land Rehabilitation and Social Forestry on LRSF Office for short. This office is mandated by the Ministry to implement any Ministerial policies on bamboo resource development and utilization in close cooperation with concerned local authorities which include Industry and Trade Development Agencies. In addition, District government is also involved in implementation of any bamboo development project because the Head of a District is the “landlord or land use regulator” and is responsible for leading community development projects within the District.

As far as bamboo resource management is concerned, the aforementioned institutions are weak in terms of coordination and institutional capacity in planning, monitoring and evaluation. The weak coordination is attributable to the unclear central government policy on bamboo resource development in the past, absence of mandated leading authority, undervaluation of the potential contribution of bamboo resource to community development and environment conservation, and lack of institutional communication. The weak institutional capacity is mainly due to the lack of professionals and information on the various aspects of bamboo resource development and utilization.

It is expected that the project will serve as an effective means to strengthen institutional coordination and at the same time to train professionals in the various aspects of bamboo resource development and utilization, and to appreciate the potential contribution of bamboo resource to community and environment development.

While the Executing Agency of the project is DGWMSF of the Ministry of Forestry, it will be implemented in collaboration with Bangli District Forestry Agency (BDFa). The main partner in implementing the project will be the Bangli District Government including the District’s Agencies for Industry and Trade Development. **In support of on-going decentralization process, the Forestry Service of Bangli District government has been intentionally chosen as the collaborating agency. This institution will have the opportunity to learn from implementation of the project of the various aspects of bamboo industry development thus to build the necessary institutional capacity to continue implementing critical activities after project completion with financial assistance from the central and local governments.**

2.1.2. Stakeholder analysis

A series of consultative meetings involving the main stakeholders of bamboo resource had been organized at the Ministry of Forestry in Jakarta and at the Bangli Forestry Agency prior to formulating the project. The main purposes of the meetings were to exchange information and experience, and to obtain inputs as well as insights from participating stakeholders especially as regards the main problem to be addressed by the project, needed interventions and strategy for implementation.

It was found during the meetings that the stakeholders were supportive of the project by providing valuable information on bamboo resource issues, expressing their interest in bamboo resource development and indicating their potential of involvement in project implementation. The stakeholder analysis is summarized in Table 2.1.

Table 2.1: Summary of stakeholder analysis through consultative meetings

| Stakeholder group | Characteristics | Problem/need/interest | Potential | Involvement in the project |
|--|--|---|--|--|
| <u>Primary stakeholders</u> <ul style="list-style-type: none"> Local communities | <ul style="list-style-type: none"> Resource owners <u>Bamboo products users</u> Laborers, poor <u>Household processors</u> | <ul style="list-style-type: none"> Lack of skills on utilization <u>Alternative sources of income</u> | <ul style="list-style-type: none"> Local knowledge Talented handcrafters Skillful labor | <ul style="list-style-type: none"> Trainees Primary beneficiary <u>Member of SHF and PSC</u> Implementation of selected activities |
| <ul style="list-style-type: none"> <u>Local private firms</u> | <ul style="list-style-type: none"> Have access to capital Established marketing network | <ul style="list-style-type: none"> Lack of information on bamboo resource and technologies Lack of skillful manager and technicians <u>Need reliable information on bamboo resource, skillful employees, favorable business environment</u> | <ul style="list-style-type: none"> Investment in bamboo industry development <u>Foster father for household processors</u> <u>Buyers of bamboo culms</u> <u>Member of SHF and PSC</u> | <ul style="list-style-type: none"> Trainees Primary beneficiary <u>Implement selected activities</u> |
| <ul style="list-style-type: none"> Bangli District Government | <ul style="list-style-type: none"> Regulates landuse and zoning Leading institution in community development | <ul style="list-style-type: none"> Lack of professionals <u>Increased income from bamboo taxes</u> | <ul style="list-style-type: none"> Can mobilize extension officers Community development planning <u>Allocate needed lands</u> | <ul style="list-style-type: none"> Permit for project site <u>Implement selected activities</u> <u>Member of SHF and PSC</u> Primary beneficiary |
| <u>Secondary stakeholders</u> <ul style="list-style-type: none"> Ministry of Forestry/ DGWMSF | <ul style="list-style-type: none"> Responsible for bamboo management Policy maker | <ul style="list-style-type: none"> Undeveloped bamboo management regime Lack of professionals Increased income of local communities Lessened pressure on forest resource | <ul style="list-style-type: none"> Experience with ITTO projects Provides counter budget Project promotion Numerous professionals | <ul style="list-style-type: none"> Executing Agency Coordination Partner of ITTO on implementation |
| <ul style="list-style-type: none"> Bangli District Forestry Agency | <ul style="list-style-type: none"> Influence on landuse planning Implementer of central and provincial policies | <ul style="list-style-type: none"> Lack of sector coordination Forest and land degradation | <ul style="list-style-type: none"> Can assist in extension <u>Assist in development of bamboo database</u> | <ul style="list-style-type: none"> <u>Collaborating Agency</u> Can mobilize field technicians Assist in monitoring |

| Stakeholder group | Characteristics | Problem/need/interest | Potential | Involvement in the project |
|---|--|--|---|--|
| <ul style="list-style-type: none"> <u>Bangli District Agencies for Industry and Trade</u> | <ul style="list-style-type: none"> - Influence on policies on investment and trade - Acquire trade information | <ul style="list-style-type: none"> - Appropriate processing technologies - Efficient marketing strategy | <ul style="list-style-type: none"> - Assist in development of training program - <u>Assist in development of bamboo database</u> | <ul style="list-style-type: none"> - Partners in implementation of trainings - Monitoring and evaluation |
| <ul style="list-style-type: none"> Local NGOs | <ul style="list-style-type: none"> - Familiar with local conditions - Field operators | <ul style="list-style-type: none"> - Accelerate community development - Conservation of environment - Poverty alleviation | <ul style="list-style-type: none"> - Sufficient field staff - Field experience | <ul style="list-style-type: none"> - Project monitoring - Sub-contracting selected activities |
| <u>Tertiary stakeholders</u> <ul style="list-style-type: none"> R&D institutions | <ul style="list-style-type: none"> - Have R&D mission - Large number of researchers | <ul style="list-style-type: none"> - Lack of opportunity to do bamboo R& D - Technology development | <ul style="list-style-type: none"> - Have competence in planning and execution of training programs | <ul style="list-style-type: none"> - <u>Formulation of bamboo management regime</u> - <u>Development of guidelines and manuals</u> - Advise on policy formulation |
| <ul style="list-style-type: none"> Universities | <ul style="list-style-type: none"> - Have education and training mission - Large number of professionals | <ul style="list-style-type: none"> - Gain field experience - Lack of experience in bamboo development | <ul style="list-style-type: none"> - Have competence in planning and execution of training programs | <ul style="list-style-type: none"> - <u>Sub-contracting selected activities</u> - Advise on policy formulation |

The local private sector will be involved in the implementation of trainings on processing and planting techniques, in the operation of stakeholder forum (SHF) and in national campaign of bamboo industry development. The private sector will take part in the workshops, regularly participate in the meetings organized by SHF, and in fostering business cooperation with local communities. More importantly, the private sector will play critical role in the marketing of bamboo products produced by households and individual processors due to the fact that private sector has already established strong marketing capability.

The local communities are owners of bamboo forests, producers of bamboo culms and handcrafters. Therefore, they will be involved in the implementation of trainings on processing, planting and harvesting techniques. As women are the backbone of bamboo handcrafting, they shall take part in the training on processing techniques in view of improving productivity and efficiency of handcrafting. The skills they acquire from the

trainings shall provide opportunity for increasing income, directly or indirectly, by working with established bamboo processing firms, improving productivity and quality of handicraft products, planting bamboo for future sale, harvesting of owned bamboo culms or sub-contracting appropriate activities on bamboo industry development in accordance with the experience and skills they have acquired.

The project will also support the formation and operational management of small business firms and cooperatives through the stakeholder forum wherein private sector and government institutions are heavily involved. The forum provides opportunity to discuss any problems and needs of small business firms and cooperatives especially those related to production and marketing systems. In addition, the government will provide revolving funds for newly established firms or cooperatives during the transition period until they can meet the requirements of the banking system for obtaining bank credit. The local communities shall be represented in the Project Steering Committee (PSC) and in the SHF in order to tap their local knowledge and understand their interest in and needs for bamboo industry development.

The local government institutions will be involved in the implementation of activities relating to identification of suitable zone for bamboo industry development, formulation of bamboo resource management regime and policies on bamboo industry as well as infrastructure development, realization of national campaign and conduct of stakeholder meetings. Moreover, they will be the member of PSC and take part in the planned workshops. It should be emphasized that the project will serve as the effective learning forum for local government officers and staffs in the various aspects of bamboo industry development including sectoral coordination, policy making and planning which will contribute to institutional strengthening process.

R&D institutions will be involved in the implementation of activities relating to formulation of bamboo management regime including production of technical manuals for harvesting, planting and processing. In addition, they will be involved in the meetings of PSC and SHF on a regular basis as well as in the workshops on bamboo industry development.

Universities will be involved in the implementation of feasibility study and bamboo growing stock surveys, in the meetings of PSC and SHF and in the workshops on bamboo industry development.

2.1.3. Problem analysis

Available data on bamboo forest and its utilization in Indonesia in general and in Bangli District in particular, indicated that the valuable and sustainable resource is underutilized and has brought about far reaching implications. Bamboo products are close substitutes for wood products in many industrial applications. Increased production of bamboo products should have reduced demand for wood products thus lessen the pressure on forest resources. At the same time, increased utilization of bamboo resources should provide more job opportunities for local communities and generate larger income which in turn should significantly reduce dependence of local communities on forests as source of income thus lessen pressure on forest resources. It is therefore logical to conclude that proper utilization of bamboo resource could contribute meaningfully to sustainable forest management.

The consultative meeting conducted in Jakarta and Denpasar noted that the low rate of utilization of bamboo resources in Indonesia is only the effect of a hidden problem. It is the result of the inability to adequately perform utilization. Therefore, the meetings had defined the key problem to be addressed by the project as "weak capacity in bamboo resource development and utilization". The cause-effect relationship of the problem is illustrated on the problem tree diagram (Figure 1).

The problem tree presents only one key problem i.e. “weak capacity of stakeholders to develop and utilize bamboo resources in an efficient and sustainable manner”. The “consequences” and “effects” identified are justifiable thus no need for revision.

Three main causes of the key problem were identified namely lack of investment, weak institutional framework, and limited skillful people for bamboo industry development. The lack of investment was attributed to five forces as follows:

- Lack of reliable information on bamboo growing stock which has discouraged business to invest in bamboo resource development and utilization. Reliability of culm supply in terms of sufficiency, quality and continuity is prerequisite to making long-term business investment;
- Information on market demand and processing technologies is not widely known by potential investors. Whilst needed information might be available at different sources, it has not reached potential investors thus does not help in investment decision-making;
- Lack of information on financial feasibility of bamboo business; this is the kind of information **that is normally needed in investment decision making**;
- Lack of support by financial institutions which is due mainly to the lack of information on economic viability of bamboo business; and
- Poor economic structure also has discouraged investment for reason of reliability of raw material supply or high transport cost.

The problem of “weak institutional framework” was considered by the meetings as the result of **five** causes, namely: i) lack of professionals on bamboo management has resulted in weak planning and monitoring; ii) weak bamboo database that does not support sound decision making; iii) weak stakeholders coordination due to the absence of coordinating forum at the operational levels; iv) unclear policies of the government at different levels as regard bamboo resource development and utilization; and v) lack of promotion on bamboo industry development at the national, regional and local levels. It is worth emphasizing at this juncture that the weak institutional framework has also had adverse effect on promotion of investment through its influence on business environment. The weak institutional framework was also believed to have limit participation of local communities through its influence on bamboo resource ownership, issuance of permits, collection of taxes and charges, etc.

The weak government capacity can be improved under the project through implementation of the various activities. The stakeholder forum to be established under the project will serve as an effective means for institutional coordination; operation of bamboo information system will assist in decision making; demonstration plots and processing plant will provide opportunity to learn first-hand of the various aspects of bamboo industry development; results of feasibility study should convince decision makers of the socio-economic benefits potential of bamboo resources.

Governance issues and poor coordination in bamboo resource development will be overcome through establishment of stakeholder forum wherein government officials, private investors and community leaders would meet regularly to exchange information, experience and ideas. As mandated by law, the forestry agency can lead this forum to discuss issues on governance and coordination and identify potential solution which should be effectively operational as they are the product of the stakeholders themselves.

The third main cause of the key problem identified was “limited skillful people for bamboo industry development”. Recall that out of 2.1 million hectares of bamboo forests, 1.41 million hectares grow on non-state land or practically owned by local communities. It is not surprising that level of participation of local communities in bamboo resource utilization has strong influence on volume of production and trade of bamboo products. The limited participation of local communities is mainly attributable to the lack of experience in bamboo resource development, lack of skills in efficient processing techniques, lack of experience in developing bamboo business, and limited access to financial capital. It is worth emphasizing that the primary source of skillful people needed for bamboo industry development must be the local communities as

these people are owners of two-third of bamboo resource; moreover, bamboo resource is mostly, if not all, distribute in rural areas of which local communities are strongly connected and generally familiar with. Therefore, the problem of scarcity of skillful people in bamboo industry development can only be overcome effectively by empowering local communities to participate in the undertaking through relevant training. The empowerment would at the same time contribute to poverty alleviation.

A Solution Tree (Figure 2) has been constructed as the mirror of the Problem Tree. The Solution Tree that shows means-end relationship of problem solving actions is to be used as the basic for defining interventions relevant for solving the problems identified. It should be noted, however, that the “means” inside the lower level boxes need detailing to ensure defined project activities are sufficient to deliver planned outputs and achieve intended outcome of the project.

2.2. Objectives

2.2.1. Development objective and impact indicators

Development objective:

The development objective has been reworded and now reads “To improve the management utilization of bamboo resources for their sustainable use and benefits to local communities”.

Impact indicators:

3 years after project completion:

- **Guidelines and technical manuals produced by the project are widely used in Bali.**
- **Quantity of processed bamboo products increased by 10%.**
- **Revenue of Bangli District Government from bamboo products increased by 15%.**

2.2.2. Specific objective and outcome indicators

Specific objective:

The specific objective has been rephrased and now reads “To initiate enhancement of capacity among stakeholders to develop and utilize bamboo resources in an efficient and sustainable manner.

Outcome indicators:

By end of the project

- **At least 3 proposals on investment submitted by private sector**
- **Bamboo management regime defined**
- **At least 60 persons from Bali and 30 persons from 15 other provinces trained on the various aspects of bamboo industry development**

Figure 1: Problem Tree

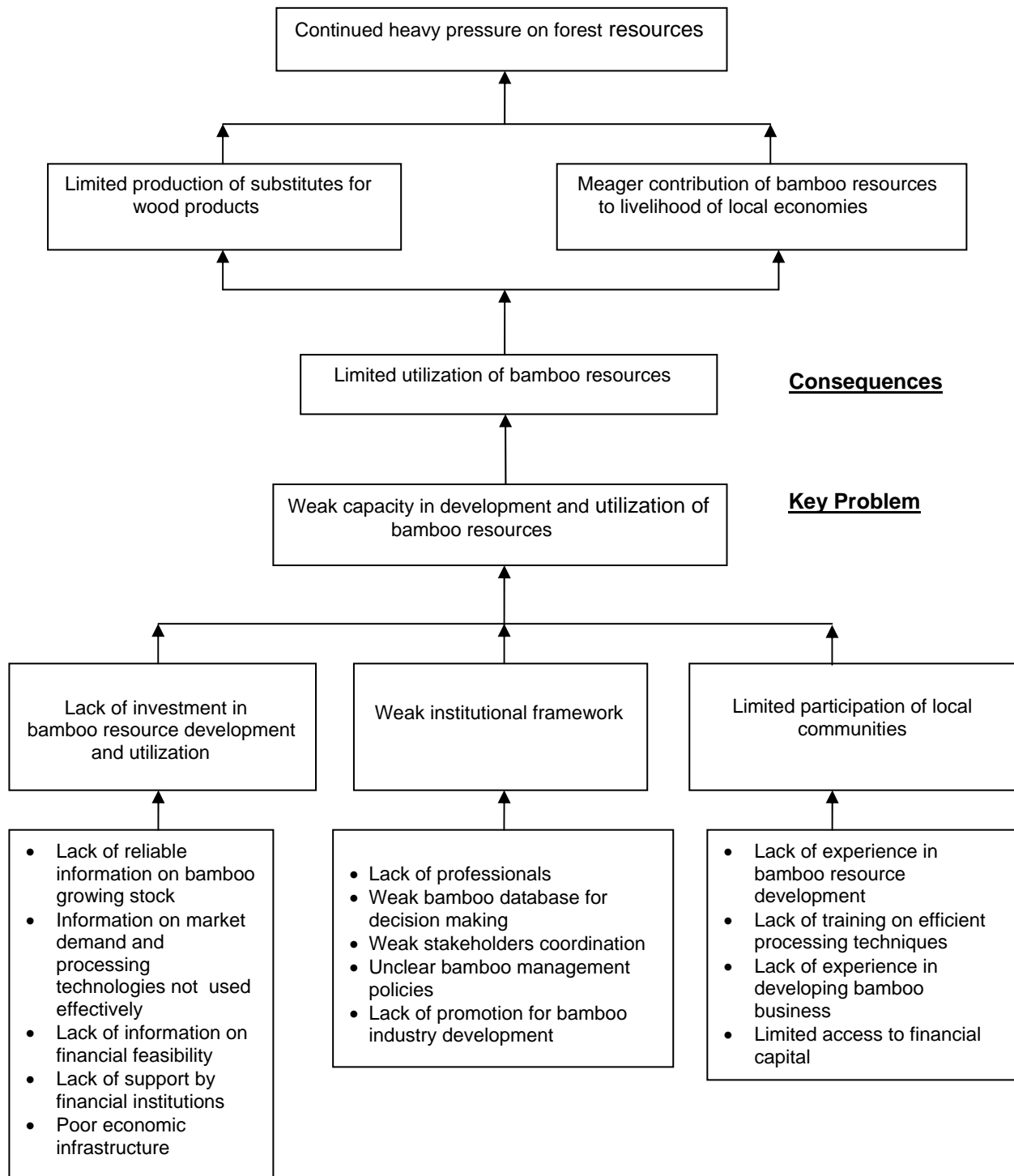
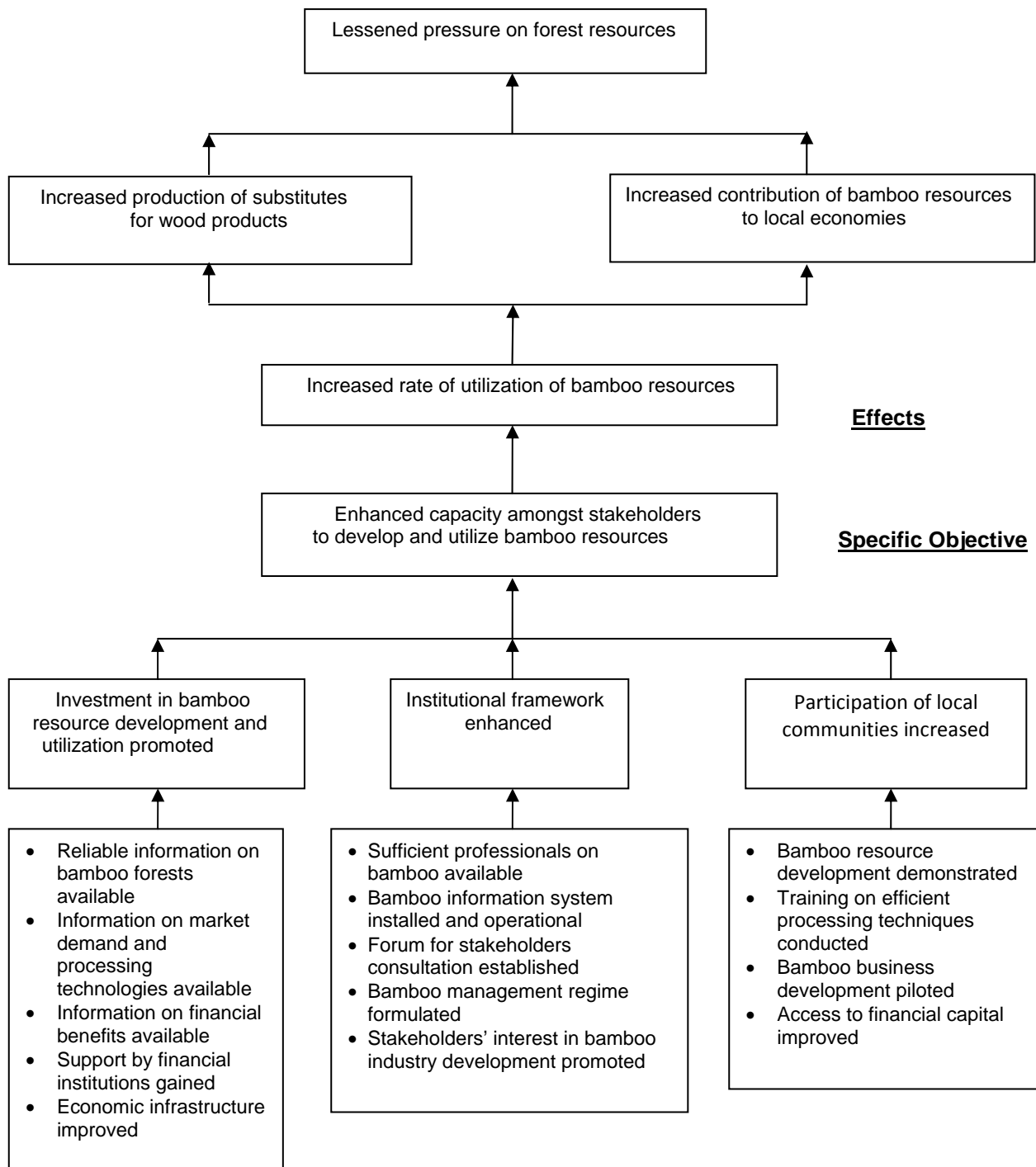


Figure 2: Solution Tree



2.1.4. Logical framework matrix

Table 2.2: Logical Framework Matrix (LFM)

| Strategy of intervention | Measurable indicators | Means of verification | Key assumptions |
|---|--|---|---|
| <p><u>Development objective</u></p> <p><u>Improved the management of bamboo resources for their sustainable use and benefits to local communities</u></p> | <p><u>3 years after project completion:</u></p> <ul style="list-style-type: none"> - <u>Guidelines and technical manuals widely used in Bali</u> - <u>Quantity of processed bamboo products increased by 10%</u> - <u>Revenue of Bangli District from bamboo products increased by 15%</u> | <ul style="list-style-type: none"> - <u>Field observation</u> - <u>Report of Bangli District Government</u> - <u>Report of Bangli District Government</u> | <ul style="list-style-type: none"> - <u>Increased participation of primary beneficiaries</u> - Consistent policies on bamboo industry development |
| <p><u>Specific objective</u></p> <p><u>Initiate enhancement of capacity amongst stakeholders to develop and utilize bamboo resources in an efficient and sustainable manner</u></p> | <p>By end of the project</p> <ul style="list-style-type: none"> - <u>At least 3 proposals on investment submitted by private sector</u> - Bamboo management regime defined - At least 60 persons from Bali and 30 persons from 15 other provinces trained on the various aspects of bamboo industry development | <ul style="list-style-type: none"> - Official document - Ministerial policy brief on bamboo resource management - Technical reports on training | <ul style="list-style-type: none"> - Investors interested in entering the bamboo industry - Sufficient primary information available for policy formulation - <u>The primary stakeholders interested in the training programs</u> |
| <p><u>Output 1:</u> Investment in bamboo industry promoted</p> | <ul style="list-style-type: none"> - Reliable information on bamboo growing stock in Bali available by end of year 1 - Information on market and technologies disseminated by end of year 1 - Feasibility study on bamboo project completed by end of year 1 - 3 national workshop on bamboo industry development conducted through end of project | <ul style="list-style-type: none"> - Technical report - Technical report - Study report - Workshops reports | <ul style="list-style-type: none"> - <u>Bamboo forest owners cooperative</u> - <u>Local authorities supportive</u> - <u>Interest of stakeholders preserved</u> |

| Strategy of intervention | Measurable indicators | Means of verification | Key assumptions |
|--|---|--|---|
| Strategy of intervention | Measurable indicators | Means of verification | Key assumptions |
| <p>Output 2: Institutional framework enhanced</p> | <ul style="list-style-type: none"> - <u>By end of year 2, local government officials and staffs well informed of the training programs and facilities</u> - <u>A bamboo information system operational since year 1</u> - <u>Stakeholder forum formed and operational in year 2</u> - <u>By end of year 2, document of bamboo management regime finalized</u> - <u>In year 1 bamboo industry zone defined</u> | <ul style="list-style-type: none"> - <u>Field visit report</u> - <u>Field inspection</u> - <u>Minutes of Meetings</u> - <u>Official technical document</u> - District government's document | <ul style="list-style-type: none"> - Concerned authorities cooperative - Supportive stakeholders - Supportive district government |
| <p>Output 3: Sufficient skillful people available for bamboo industry development</p> | <ul style="list-style-type: none"> - By end of year 1, 6Ha of demo plots for natural bamboo established on 4 sites - By end of year 1, four bamboo species planted on 12Ha of land on 4 sites for demonstration - By end of project 90 persons trained on various aspects of bamboo industry development - In year 2 small-scale processing plant installed and operational - By end of year 3, two CSEs or cooperatives established and piloted run | <ul style="list-style-type: none"> - Technical document - Monitoring document - Training report - Technical report - Technical document | <ul style="list-style-type: none"> - Land and professionals available in time - Land and professionals available in time - Local communities, government institutions and private sector interested in the training programs - Land and qualified professionals available in time - Communities interested in the activity |

Part 3: DESCRIPTION OF PROJECT INTERVENTIONS

3.1. Outputs and activities

3.1.1. Outputs

Three outputs have been defined correspond to the main causes of the problem to be addressed by the project as follows:

- Output 1: Investment in bamboo industry development promoted
- Output 2: Institutional framework for bamboo industry development enhanced
- Output 3: Participation of local communities in bamboo industry development increased

Indicators of individual outputs are as specified in the logical framework matrix (Table 2.2).

3.1.2. Activities

Output 1:

- Activity 1.1 Collect, publish and disseminate reliable information on Bali's bamboo growing stock
- Activity 1.2 Collect, publish and disseminate updated information on market demand for bamboo products and processing technologies
- Activity 1.3 Conduct feasibility study on bamboo development project in Bali
- Activity 1.4 Assess adequacy of economic infrastructure and discuss findings with Bali governments
- Activity 1.5 Organize one national workshop on bamboo industry development in Bali

Note that the information generated under Activities 1.1 through 1.4 will be presented to the national workshop (Activity 1.5) and is expected to catch the attention of potential investors, financial institutions, and concerned government authorities. Therefore, there is no activity specifically devoted to gaining support by financial institutions. **Activity 1.3 is particularly important to demonstrate to stakeholders financial feasibility of bamboo industry development.**

Output 2

- Activity 2.1 Identify and officially designate zone area for bamboo industry development in Bali
- Activity 2.2 Install and operate a publicly accessible bamboo information system
- Activity 2.3 Establish a stakeholder consultation forum for bamboo industry development
- Activity 2.4 Review existing policies and define bamboo management regime to guide the conduct of efficient bamboo resource development and utilization
- Activity 2.5 Launch a national campaign on promotion of bamboo industry development

Output 3

- Activity 3.1 Allocate 6 Ha of natural bamboo forest in 4 sites as demonstration plots for management practices
- Activity 3.2 Establish 12 Ha of demonstration plantation of 4 bamboo species having high commercial value on 4 sites under different treatments
- Activity 3.3 Identify and develop technologies for producing quality planting materials to support bamboo plantation development
- Activity 3.4 Identify appropriate bamboo processing technologies for a small-scale processing plant
- Activity 3.5 Procure, install the technologies, and operate the processing plant
- Activity 3.6 Conduct a series of training on production of planting materials, plantation establishment, natural bamboo management practices and efficient processing techniques

- Activity 3.7 Publish and disseminate technical manuals on natural bamboo management, production of quality planting materials, establishment of bamboo plantation and efficient processing techniques
- Activity 3.8 **Establish two models of Community Small Enterprise (CSE) or cooperative on bamboo business to be run by local communities using revolving funds provided by GOI**
- Activity 3.9 Organize a national workshop on dissemination of project results nation wide

Note that the envisaged solution for the sub-causes of the problem listed on the Problem Tree diagram that appear on the Solution Tree diagram has been broken down to ensure sufficiency of activities to deliver Output 3 and adequacy of inputs specification as follows:

- Activities 3.1, 3.2, 3.3, 3.6 correspond to “bamboo resource development demonstrated;
- Activities 3.4, 3.5, and 3.6 correspond to “training on efficient processing techniques conducted; and
- Activity 3.7 has been introduced to handle technical manuals relating to Activities 3.1 through 3.6.

There is no activity devoted to handling the problem on limited access to financial capital facing local communities as Activity 1.5 is dealing with similar problem noting that local communities are also potential investors.

3.2. Implementation approaches and methods

The project design builds on the classical economic theory. That to produce a good or service for consumption, factors of production i.e. land, capital and labor must be made available. To produce bamboo products, bamboo raw material or “land” is abundantly available. What lacking are capital or investment and labor or skillful people. These are the two outputs that have to be delivered by the project which are defined as “promoted investment” and “increased participation of local communities”. Production process as well as upstream and downstream processes are indeed influenced by business environment, that to a large extent, shaped by government policies. This is the very reason why “enhanced institutional framework” has been defined as output of the project.

It is important to note that local communities are the main target of the trainings under the project due to the fact that they are owners of the bulk of bamboo resource, but poor and the communities are expected to become the primary supplier of skillful “labor” to support bamboo industry development.

Experience shows that any unilaterally implemented project failed to achieve its intended outputs and objectives. Therefore, this project will be implemented using participatory approach, i.e. activities will be executed in consultation, cooperation or collaboration with stakeholders. The following main steps will be taken in a participatory manner.

i. Dissemination of quality information

To promote investment or “capital” in bamboo industry development (Output 1), to enhance decision making and policy formulation (Output 2) and to increase “labor” participation (Output 3), quality information must be made available and disseminated to main stakeholders of the industry. Generation and dissemination of information will involve consultants and experts, government authorities, local communities, universities and NGOs since there is a general lack of stakeholders’ interest in bamboo industry development. To promote participation of stakeholders, there is a need to launch an effective national campaign using the right various media tools e.g. television, radio broadcast, printed materials, etc. to disseminate information on bamboo resources and their development nationwide.

ii. Training on bamboo industry development

Scope of the training covers management of natural bamboo, development of bamboo plantation, production of planting materials, efficient processing techniques and business development. Training participants will include local communities (job hungry due to poverty),

practitioners (job seekers for better life) and civil servants (decision makers). Training program and modules will be developed with the assistance of professionals in close consultation with practitioners, and implemented in cooperation with universities, NGOs and local authorities.

iii. Establishment of coordinating forum

The forum will be established at the provincial and level where stakeholders can exchange information, experience and ideas. In such a forum, farmers have the opportunity to meet with business leaders to discuss business ideas and partnership; authorities may regularly meet with each other to improve mutual understanding and coordination; business leaders may provide insights for policy formulation, etc.

iv. Enhancement of institutional framework

Training of government officials and staffs both under the project and overseas, availability of reliable information as well as strengthened coordination amongst stakeholders shall lead to enhanced capacity in planning, monitoring, decision making and policy formulation.

v. Security and sustainability of the project

To secure the project area in the long-run, especially the processing plant and demonstration sites, the land must be officially designated by concerned local governments as the bamboo industry development zone. By so doing, training program on bamboo industry can be implemented on site in the long-run using existing facilities in the long-term, particularly the processing plant and demonstration plots on bamboo resource development thus sustaining impact of the project.

vi. Monitoring system

Prior to commencing project operations, the Project Coordinator is to develop a monitoring system establishing indicators to monitor, frequency of monitoring and parties responsible for doing the task, source of finance, etc. In this way, any deviation to the project design and workplan can be detected at early stage and necessary corrective actions taken.

In designing the above implementation approaches and methods, the information below has been taken into account:

- **Bamboo processing technologies**
Include the techniques for harvesting of bamboo stands, production of veneer, plywood and LVL (Laminated Veneer Lumber), making of parquets for flooring, finger-jointing, bamboo drying and preservation.
- **Small business enterprise and cooperative development**
Most members of the communities in urban and rural areas have no knowledge and experience in establishing and managing business entity in accordance with existing government rules and procedures. Therefore, the project should provide technical assistance to these communities.
- **Demonstration plots**
Will be established for both natural and planted bamboo stands. On natural bamboo, the main purpose is to develop technical guidelines on the harvesting of mature bamboo culms and on the nurturing of residual stands in view of improving quality and ensuring sustainability of the stands. On bamboo plantation plots, the primary aims are to produce technical guidelines on the selection of species, site preparation, planting and maintenance of young bamboo plants.
- **Capacity building scope**
Covers the capacity of private sector and local communities in survey of bamboo growing stock, harvesting and maintenance of natural bamboos, establishment of bamboo plantation including production of quality planting materials, processing of bamboo culms, establishment and management of business cooperatives by local communities

and institutional strengthening including coordination of stakeholders, decision making, policy formulation and planning.

- Revolving funds vs existing banking system

A newly established firm or cooperative will normally need financial capital. Existing banking system provides bank credit only to a firm or cooperative having proven profitable business performance and with collateral. Obviously, a newly established firm or cooperative can not meet these banking requirements. Hence, there is a need to provide revolving funds to assist this firm during the transition period. Meanwhile, there is a need for the project to approach local bankers and discuss existing requirements for securing bank credit. For instance, possibility of using bamboo growing stock or business development plan as collateral for bank credit.

3.3. Workplan

Table 3.1: Workplan for the entire duration

| Output/activities | Responsible Party | Year 1 | | | | Year 2 | | | | Year 3 | | | |
|--|--------------------|--------|----|----|----|----------|----------|----------|----------|----------|----------|----------|----------|
| | | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 |
| Output 1 | | | | | | | | | | | | | |
| Activity 1.1: Collect, publish and disseminate reliable information on Bali's bamboo growing stock | PC, NC, UN | V | V | V | V | | | | | | | | |
| Activity 1.2: Collect, publish and disseminate updated information on market demand for bamboo products and processing technologies | PC, NC | | V | V | V | | | | | | | | |
| Activity 1.3: Conduct feasibility study on bamboo development project in Bali | PC, NC, UN | | V | V | | | | | | | | | |
| Activity 1.4: Assess adequacy of economic infrastructure and discuss findings with Bali governments | PC, NC, LG | | V | V | | | | | | | | | |
| Activity 1.5: Organize one national workshop on bamboo industry development in Bali | PC, BDFA | | | | V | | | | | | | | |
| Output 2 | | | | | | | | | | | | | |
| Activity 2.1: Identify and officially designate zone area for bamboo industry development | PC, NC, LG | V | V | | | | | | | | | | |
| Activity 2.2: Install and operate a publicly accessible bamboo information system | PC, NC | V | V | V | V | V | V | V | V | V | V | V | V |
| Activity 2.3: Establish a stakeholder consultation forum for bamboo industry development | PC, NC | | | | | <u>V</u> | <u>V</u> | <u>V</u> | <u>V</u> | <u>V</u> | <u>V</u> | <u>V</u> | <u>V</u> |
| Activity 2.4: Review existing policies and define bamboo management regime to guide the conduct of efficient bamboo resource development and utilization | PC, NC | | | | | | | V | V | | | | |
| Activity 2.5: Launch national campaign to promote bamboo industry development | PC, NC, RDI | V | V | V | V | V | V | V | V | V | V | V | V |
| Output 3 | | | | | | | | | | | | | |
| Activity 3.1: Allocate 6 Ha of natural bamboo forest in 4 sites as demonstration plots of silviculture techniques | NC, BDFA | | | V | V | V | V | V | V | V | V | V | V |
| Activity 3.2: Establish 12 Ha of demonstration plantation of 4 bamboo species having high commercial value in 4 sites under different treatments | NC, BDFA, NGO | | | V | V | V | V | V | V | V | V | V | V |

| Output/activities | Responsible Party | Year 1 | | | | Year 2 | | | | Year 3 | | | |
|--|----------------------|--------|----|----|----|--------|----|----|----|--------|----|----|----|
| | | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 |
| Activity 3.3: Identify and develop appropriate technologies for producing quality planting materials to support bamboo plantation development | BDFa, NC, NGO | | | V | V | V | V | V | V | V | V | V | V |
| Activity 3.4: Identify appropriate bamboo processing technologies for a small-scale processing plant | PC, NC, IC | V | V | | | | | | | | | | |
| Activity 3.5: Procure and install selected technologies, and operate the processing plant | PC, NC, IC | | | V | V | V | V | V | V | V | V | V | V |
| Activity 3.6: Conduct a series of training on production of planting materials, plantation establishment, natural bamboo management techniques and efficient processing techniques | PC, PT | | | | | | V | V | V | V | V | V | |
| Activity 3.7: Publish and disseminate technical manuals on natural bamboo management, production of quality planting materials, establishment of bamboo plantation and efficient processing techniques | PC, IC, NC | | | | | | | | | | | V | V |
| <u>Activity 3.8: Establish 2 CSEs or cooperatives on bamboo business to be run by local communities using revolving funds from GOI</u> | PC, NGO | | | | | V | V | V | V | | | | |
| Activity 3.9: Organize a national workshop on dissemination of project results nation wide | PC, PFO | | | | | | | | | | | | V |

Notes:

PC = Project Coordinator
NC = National Consultant
LG = Local Governments
BDFa = Bangli District Forestry Agency
NGO = Non-Governmental Organization
IC = International Consultant
UN = University
PT = Professional Trainer
RDI = R&D Institutions

3.4 Budget

3.4.1. Master budget of bamboo project

| Output/Activity | Quarter | Budget Component | Inputs | Unit | Quantity | | Unit Cost | ITTO Contribution | | | Gol Contribution | | | Total |
|---|------------|----------------------------|---|-----------------------------------|---------------------------------------|--------------------------|---|---|-----------------------|-----------------------|------------------------------|-----------------------|-----------------------|--|
| | | | | | ITTO | Gol | | Year 1 | Year 2 | Year 3 | Year 1 | Year 2 | Year 3 | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| Output 1: | | | | | | | | | | | | | | |
| Activity 1.1: Collect, publish and disseminate reliable information on Bali's bamboo growing stock | Q1-4 Y1 | 21 61 62 | a. Sub-contract 1: Bamboo growing stock survey in Bali by University b. Publication and distribution c. Miscellaneous | Contract Copy Meeting | 0.80 200.00 3.00 | 0.20 - - | 20,000.00 10.00 250.00 | 16,000.00 2,000.00 750.00 | - - - | - - - | 4,000.00 - - | - - - | - - - | 20,000.00 2,000.00 750.00 |
| Sub-total Activity 1.1 | | | | | | | | 18,750.00 | - | - | 4,000.00 | - | - | 22,750.00 |
| Activity 1.2: Collect, publish and disseminate updated information on market demand for bamboo products and processing technologies | Q2-4 Y1 | 29 61 | a. National Consultant b. Publication and distribution | MM Copy | 1.50 400.00 | - - | 2,000.00 10.00 | 3,000.00 4,000.00 | - - | - - | - - | - - | - - | 3,000.00 4,000.00 |
| Sub-total Activity 1.2 | | | | | | | | 7,000.00 | - | - | - | - | - | 7,000.00 |
| Activity 1.3: Conduct feasibility study on bamboo industry development in Bali | Q2-3 Y1 | 22 31 32 61 62 | a. Sub-contract 2: University for study on bamboo utilization b. DSA c. Local transport d. Publication and dissemination e. Miscellaneous | MM MD TD Copy Meeting | 2.00 20.00 20.00 400.00 - | - - - - 2.00 | 2,000.00 80.00 60.00 10.00 250.00 | 4,000.00 1,600.00 1,200.00 4,000.00 - | - - - - - | - - - - - | - - - - 500.00 | - - - - - | - - - - - | 4,000.00 1,600.00 1,200.00 4,000.00 500.00 |
| Sub-total Activity 1.3 | | | | | | | | 10,800.00 | - | - | 500.00 | - | - | 11,300.00 |
| Activity 1.4: Assess adequacy of economic infrastructure and discuss findings with Bali governments | Q2-3 Y1 | 29 31 32 61 62 | a. National Consultant b. DSA c. Local transport d. Publication and dissemination e. Miscellaneous | MM MD TD Copy Meeting | 1.00 15.00 15.00 100.00 - | - - - - 2.00 | 2,000.00 80.00 60.00 10.00 500.00 | 2,000.00 1,200.00 900.00 1,000.00 - | - - - - - | - - - - - | - - - - 1,000.00 | - - - - - | - - - - - | 2,000.00 1,200.00 900.00 1,000.00 1,000.00 |
| Sub-total Activity 1.4 | | | | | | | | 5,100.00 | - | - | 1,000.00 | - | - | 6,100.00 |
| Activity 1.5: Organize one national workshop on bamboo industry development in Bali | Q4 Y1 | 23 61 62 | a. Sub-contract 3: PEO for National Workshop 1 on bamboo industry development b. Publication and dissemination c. Miscellaneous | Contract Copy Meeting | 0.50 200.00 - | 0.50 - 2.00 | 18,000.00 15.00 250.00 | 9,000.00 3,000.00 - | - - - | - - - | 9,000.00 - 500.00 | - - - | - - - | 18,000.00 3,000.00 500.00 |
| Sub-total Activity 1.5 | | | | | | | | 12,000.00 | - | - | 9,500.00 | - | - | 21,500.00 |
| Total Output 1 | | | | | | | | 53,650.00 | - | - | 15,000.00 | - | - | 68,650.00 |

| | | | | | | | | | | | | | | | | |
|--|--------------|----------------------------|----------------------------|--|--------------------------------------|---------------------------------------|-------------------------------------|--|--|---|--|---|--|--|--|---|
| Output 2: | | | | | | | | | | | | | | | | |
| Activity 2.1: Identify and officially designate zone area for bamboo industry development | Q1 Y1 | 18 31 32 62 | a. b. c. d. | Professional surveyor DSA Local transport Miscellaneous | MM MD TD Meeting | 1.00 7.00 7.00 - | - - - 2.00 | 2,000.00 80.00 60.00 500.00 | 2,000.00 560.00 420.00 - | - - - - | - - - - | - - - 1,000.00 | - - - - | - - - - | - - - - | 2,000.00 560.00 420.00 1,000.00 |
| Sub-total Activity 2.1 | | | | | | | | | 2,980.00 | - | - | 1,000.00 | - | - | - | 3,980.00 |
| Activity 2.2: Install and operate a publicly accessible bamboo information system | Q1-4 Y1-3 | 24 41 13 63 62 | a. b. c. d. e. | Sub-contract 4: National Consultant for development of bamboo information system PC and facilities Operators Web provider rental Miscellaneous | MM Unit MM MM Meeting | 2.00 2.00 - 15.00 - | - 1.00 36.00 15.00 3.00 | 2,000.00 2,500.00 250.00 200.00 250.00 | 1,333.33 5,000.00 - 1,000.00 - | 1,333.33 - - 1,000.00 - | 1,333.34 - - 1,000.00 - | - 2,500.00 3,000.00 1,000.00 250.00 | - - 3,000.00 1,000.00 250.00 | - - 3,000.00 1,000.00 250.00 | - - - 1,000.00 - | 4,000.00 7,500.00 9,000.00 6,000.00 750.00 |
| Sub-total Activity 2.2 | | | | | | | | | 7,333.33 | 2,333.33 | 2,333.34 | 6,750.00 | 4,250.00 | 4,250.00 | 4,250.00 | 27,250.00 |
| Activity 2.3: Establish a stakeholder consultation forum for bamboo industry development | Q1-2 Y2 | 62 36 31 | a. b. c. | Consultative meetings Air tickets DSA 2 trips @ 2 days | Meeting Trip MD | - 4.00 8.00 | 6.00 - - | 250.00 200.00 80.00 | - - - | - 800.00 640.00 | - - - | - - - | 1,500.00 - - | - - - | - - - | 1,500.00 800.00 640.00 |
| Sub-total Activity 2.3 | | | | | | | | | - | 1,440.00 | - | - | 1,500.00 | - | - | 2,940.00 |
| Activity 2.4: Review existing policies and define bamboo management regime to guide the conduct of efficient bamboo resource development and utilization | Q3-4 Y2 | 29 36 31 32 62 | a. b. c. d. e. | National Consultants Air tickets, 2 persons, 2 trips DSA, 2 persons @ 10 days Local transport Miscellaneous, group discussions' | MM Trip MD TD Meeting | 2.00 6.00 20.00 - - | - - - 20.00 3.00 | 2,000.00 200.00 80.00 60.00 500.00 | - - - - - | 4,000.00 1,200.00 1,600.00 - - | - - - - - | - - - - - | - - - 1,200.00 1,500.00 | - - - - - | - - - - - | 4,000.00 1,200.00 1,600.00 1,200.00 1,500.00 |
| Sub-total Activity 2.4 | | | | | | | | | - | 6,800.00 | - | - | 2,700.00 | - | - | 9,500.00 |
| Activity 2.5: To launch national campaign on bar | Q1-4 Y1-3 | 29 61 56 61 62 | a. b. c. d. e. | National Consultant TV Show Printed materials Misc. campaign support Misc. meetings | MM Hour Copy Set Meeting | 2.00 4.00 5,000.00 - 3.00 | - - 2,500.00 1.00 3.00 | 2,000.00 1,500.00 2.00 6,000.00 600.00 | 2,000.00 - - - 600.00 | 2,000.00 4,500.00 5,000.00 - 600.00 | - 4,500.00 5,000.00 - 600.00 | - - 2,500.00 2,000.00 600.00 | - - 2,500.00 2,000.00 600.00 | - - 2,500.00 2,000.00 600.00 | - - 2,500.00 2,000.00 600.00 | 4,000.00 9,000.00 17,500.00 6,000.00 3,600.00 |
| Sub-total Activity 2.5 | | | | | | | | | 2,600.00 | 12,100.00 | 10,100.00 | 5,100.00 | 5,100.00 | 5,100.00 | 40,100.00 | |
| Total Output 2 | | | | | | | | | 12,913.33 | 22,673.33 | 12,433.34 | 12,850.00 | 13,550.00 | 9,350.00 | 83,770.00 | |

| | | | | | | | | | | | | | | | |
|--|-------------------------------|---|--|---------|--------|-----------|-----------|-----------|----------|-----------|-----------|----------|----------|-----------|-------------------|
| Output 3: | | | | | | | | | | | | | | | |
| Activity 3.1: Allocate 6 Ha of natural bamboo forest on 4 sites as demonstration plots of management practices | Q3-4 Y1 | 29 | a. National Consultant | MM | 3.00 | - | 2,000.00 | 6,000.00 | - | - | - | - | - | - | 6,000.00 |
| | | 31 | b. DSA | MD | 15.00 | - | 80.00 | 1,200.00 | - | - | - | - | - | - | 1,200.00 |
| | Q1-4 Y1-2 | 32 | c. Local transport | TD | - | 15.00 | 60.00 | - | - | - | 450.00 | 450.00 | - | - | 900.00 |
| | | 51 | d. Consumables (plot) | ha | 6.00 | - | 600.00 | 1,800.00 | 1,800.00 | - | - | - | - | - | 3,600.00 |
| | 42 | e. Capital items | Set | 2.00 | - | 2,500.00 | 2,500.00 | 2,500.00 | - | - | - | - | - | 5,000.00 | |
| | 14 | f. 5 Laborers, 12 days | MD | 60.00 | - | 10.00 | 300.00 | 300.00 | - | - | - | - | - | 600.00 | |
| | 68 | g. Miscellaneous | - | 1.00 | - | 600.00 | 300.00 | 300.00 | - | - | - | - | - | 600.00 | |
| | Sub-total Activity 3.1 | | | | | | | | | | | | | | |
| Activity 3.2: Establish 12 Ha of demonstration plantation of 4 bamboo species having high commercial value on 4 sites under different treatments | Q3-4 Y1 | 29 | a. National Consultant | MM | 2.00 | - | 2,000.00 | 4,000.00 | - | - | - | - | - | - | 4,000.00 |
| | | 25 | b. Sub-contract 5: NGO for establishment of 12 Ha bamboo plantations | Ha | 8.00 | 4.00 | 1,500.00 | 12,000.00 | - | - | 6,000.00 | - | - | - | 18,000.00 |
| | Q1-4 Y2-3 | 14 | c. 4 attending workers | MM | - | 120.00 | 150.00 | - | - | - | 9,000.00 | 9,000.00 | - | - | 18,000.00 |
| | | 68 | d. Miscellaneous | - | 1.00 | - | 500.00 | - | 250.00 | 250.00 | - | - | - | - | 500.00 |
| Sub-total Activity 3.2 | | | | | | | | | | | | | | | 40,500.00 |
| Activity 3.3: Identify and develop appropriate technologies for producing quality planting materials to support bamboo plantation development | Q3-4 Y1 | 26 | a. Sub-contract 6: Demonstration of technologies for production of planting materials (EA & R&D) | Species | - | 4.00 | 4,000.00 | - | - | - | 16,000.00 | - | - | - | 16,000.00 |
| | | 29 | b. National Consultant | MM | 1.00 | - | 2,000.00 | 2,000.00 | - | - | - | - | - | - | 2,000.00 |
| | Q1-4 Y2-3 | 31 | c. DSA, NC | MD | 10.00 | - | 80.00 | - | 400.00 | 400.00 | - | - | - | - | 800.00 |
| | | 32 | d. Local transport | TD | - | 10.00 | 60.00 | - | - | - | - | 300.00 | 300.00 | - | 600.00 |
| | | 68 | e. Miscellaneous | Set | 1.00 | - | 500.00 | - | 250.00 | 250.00 | - | - | - | - | 500.00 |
| Sub-total Activity 3.3 | | | | | | | | | | | | | | | 19,900.00 |
| Activity 3.4: Identify appropriate bamboo processing technologies for a small-scale processing plant | Q1-2 Y1 | 29 | a. National Consultant | MM | 1.00 | - | 2,000.00 | 2,000.00 | - | - | - | - | - | - | 2,000.00 |
| | | 32 | b. Local transport | TD | - | 10.00 | 60.00 | - | - | - | 600.00 | - | - | - | 600.00 |
| | Q1-2 Y1 | 31 | c. National DSA | MD | 10.00 | - | 80.00 | 800.00 | - | - | - | - | - | - | 800.00 |
| | | 62 | d. Miscellaneous, group discussions | Meeting | - | 2.00 | 500.00 | - | - | - | 1,000.00 | - | - | - | 1,000.00 |
| Sub-total Activity 3.4 | | | | | | | | | | | | | | | 4,400.00 |
| Activity 3.5: Procure, install, and operate the processing technologies | Q3-4 Y1 | 15 | a. International Consultant | MM | 2.00 | - | 10,000.00 | 20,000.00 | - | - | - | - | - | - | 20,000.00 |
| | | 35 | b. International DSA | MD | 60.00 | - | 120.00 | 7,200.00 | - | - | - | - | - | - | 7,200.00 |
| | Q1-4 Y2-3 | 33 | c. International air tickets | Trip | 2.00 | - | 1,500.00 | 3,000.00 | - | - | - | - | - | - | 3,000.00 |
| | | 29 | d. National Consultant | MM | 2.00 | - | 2,000.00 | 2,000.00 | 2,000.00 | - | - | - | - | - | 4,000.00 |
| | 31 | e. National DSA | MD | 60.00 | - | 80.00 | 2,400.00 | 2,400.00 | - | - | - | - | - | 4,800.00 | |
| | 43 | f. Building construction for training center & processing plant | M2 | 150.00 | 150.00 | 200.00 | 30,000.00 | - | - | 15,000.00 | 15,000.00 | - | - | - | 60,000.00 |
| | 13 | g. 1 attending technician | MM | - | 24.00 | 300.00 | - | - | - | - | 3,600.00 | 3,600.00 | - | - | 7,200.00 |
| | 52 | h. Utilities | Monthly | 18.00 | 18.00 | 1,000.00 | 6,000.00 | 6,000.00 | 6,000.00 | 6,000.00 | 6,000.00 | 6,000.00 | 6,000.00 | 6,000.00 | 36,000.00 |
| | 44 | i. Plant office facilities | Set | - | 1.00 | 4,000.00 | - | - | - | 4,000.00 | - | - | - | - | 4,000.00 |
| | 45 | j. 1 set machinery and equipment, detailed in Annex 6 | Set | 0.70 | 0.30 | 70,000.00 | 49,000.00 | - | - | 21,000.00 | - | - | - | - | 70,000.00 |
| 53 | k. Consumables (materials) | Month | 24.00 | - | 300.00 | 2,400.00 | 2,400.00 | 2,400.00 | - | - | - | - | - | 7,200.00 | |
| 55 | l. Miscellaneous consumables | Month | 15.00 | 15.00 | 500.00 | 2,500.00 | 2,500.00 | 2,500.00 | 2,500.00 | 2,500.00 | 2,500.00 | 2,500.00 | 2,500.00 | 15,000.00 | |
| Sub-total Activity 3.5 | | | | | | | | | | | | | | | 238,400.00 |

| | | | | | | | | | | | | | | | |
|--|------|----|---------------------------|--|----------|--------|--------|-----------|-------------------|------------------|------------------|------------------|------------------|------------------|-------------------|
| Activity 3.6: Conduct series of training on production of planting materials, plantation establishment, natural bamboo management techniques and efficient processing techniques | Q2-3 | 16 | a. | Professional trainers (PT) | MD | 42.00 | - | 80.00 | - | 1,680.00 | 1,680.00 | - | - | - | 3,360.00 |
| | Y2 | 31 | b. | DSA | MD | 42.00 | - | 80.00 | - | 1,680.00 | 1,680.00 | - | - | - | 3,360.00 |
| | Q1-3 | 36 | c. | PT's air tickets, 2 persons | Trip | 12.00 | - | 200.00 | - | 1,200.00 | 1,200.00 | - | - | - | 2,400.00 |
| | Y3 | 31 | d. | DSA 90 trainees @ 7 days | MD | 420.00 | 210.00 | 30.00 | - | 6,300.00 | 6,300.00 | - | 3,150.00 | 3,150.00 | 18,900.00 |
| | 36 | e. | Air tickets - 30 trainees | Trip | 30.00 | - | 200.00 | - | 3,000.00 | 3,000.00 | - | - | - | 6,000.00 | |
| | 32 | f. | Local transport | Week | - | 6.00 | 500.00 | - | - | - | - | 1,500.00 | 1,500.00 | 3,000.00 | |
| | 55 | g. | Miscellaneous consumable | Week | 3.00 | 3.00 | 300.00 | - | 450.00 | 450.00 | - | 450.00 | 450.00 | 1,800.00 | |
| | 62 | h. | Miscellaneous meetings | Meeting | 6.00 | 6.00 | 200.00 | - | 600.00 | 600.00 | - | 600.00 | 600.00 | 2,400.00 | |
| Sub-total Activity 3.6 | | | | | | | | | - | 14,910.00 | 14,910.00 | - | 5,700.00 | 5,700.00 | 41,220.00 |
| Activity 3.7: Publish and disseminate technical manuals on natural bamboo management, production of quality planting materials, establishment of bamboo plantation and efficient processing techniques | Q3-4 | 29 | a. | National Consultant | MM | 1.00 | - | 2,000.00 | - | - | 2,000.00 | - | - | - | 2,000.00 |
| | Y3 | 61 | b. | Publication and distribution of 4 Technical Manuals @ 250 copies | Copy | 500.00 | 500.00 | 10.00 | - | - | 5,000.00 | - | - | 5,000.00 | 10,000.00 |
| Sub-total Activity 3.7 | | | | | | | | | - | - | 7,000.00 | - | - | 5,000.00 | 12,000.00 |
| Activity 3.8: Establish 4 CSEs on bamboo business to be run by local communities using revolving funds | Q1-4 | 27 | a. | Sub-contract 7: NGO for technical assistance on bamboo business | Contract | 1.00 | - | 6,400.00 | - | 6,400.00 | - | - | - | - | 6,400.00 |
| | Y2 | 65 | b. | Revolving funds | CSE | - | 2.00 | 5,000.00 | - | - | - | - | 10,000.00 | - | 10,000.00 |
| Sub-total Activity 3.8 | | | | | | | | | - | 6,400.00 | - | - | 10,000.00 | - | 16,400.00 |
| Activity 3.9: Organize a national workshop on dissemination of project results nation wide | Q4 | Y3 | 28 | Sub-contract 8: PED for National Workshop 2 on Project results dissemination | Package | 0.53 | 0.47 | 19,000.00 | - | - | 10,000.00 | - | - | 9,000.00 | 19,000.00 |
| Sub-total Activity 3.9 | | | | | | | | | - | - | 10,000.00 | - | - | 9,000.00 | 19,000.00 |
| Total Output 3 | | | | | | | | | 157,400.00 | 42,410.00 | 43,710.00 | 72,550.00 | 52,550.00 | 41,100.00 | 409,720.00 |

| | | | | | | | | | | | | | | | | |
|--|------|----|---------------------------|--|----------|--------|--------|-----------|-------------------|------------------|------------------|-------------------|------------------|------------------|-------------------|------------------|
| Activity 3.6: Conduct series of training on production of planting materials, plantation establishment, natural bamboo management techniques and efficient processing techniques | Q2-3 | 16 | a. | Professional trainers (PT) | MD | 42.00 | - | 80.00 | - | 1,680.00 | 1,680.00 | - | - | - | 3,360.00 | |
| | Y2 | 31 | b. | DSA | MD | 42.00 | - | 80.00 | - | 1,680.00 | 1,680.00 | - | - | - | 3,360.00 | |
| | Q1-3 | 36 | c. | PT's air tickets, 2 persons | Trip | 12.00 | - | 200.00 | - | 1,200.00 | 1,200.00 | - | - | - | 2,400.00 | |
| | Y3 | 31 | d. | DSA 90 trainees @ 7 days | MD | 420.00 | 210.00 | 30.00 | - | 6,300.00 | 6,300.00 | - | 3,150.00 | 3,150.00 | 18,900.00 | |
| | 36 | e. | Air tickets - 30 trainees | Trip | 30.00 | - | 200.00 | - | 3,000.00 | 3,000.00 | - | - | - | 6,000.00 | | |
| | 32 | f. | Local transport | Week | - | 6.00 | 500.00 | - | - | - | - | 1,500.00 | 1,500.00 | 3,000.00 | | |
| | 55 | g. | Miscellaneous consumable | Week | 3.00 | 3.00 | 300.00 | - | 450.00 | 450.00 | - | 450.00 | 450.00 | 1,800.00 | | |
| | 62 | h. | Miscellaneous meetings | Meeting | 6.00 | 6.00 | 200.00 | - | 600.00 | 600.00 | - | 600.00 | 600.00 | 2,400.00 | | |
| Sub-total Activity 3.6 | | | | | | | | | | - | 14,910.00 | 14,910.00 | - | 5,700.00 | 5,700.00 | 41,220.00 |
| Activity 3.7: Publish and disseminate technical manuals on natural bamboo management, production of quality planting materials, establishment of bamboo plantation and efficient processing techniques | Q3-4 | 29 | a. | National Consultant | MM | 1.00 | - | 2,000.00 | - | - | 2,000.00 | - | - | - | 2,000.00 | |
| | Y3 | 61 | b. | Publication and distribution of 4 Technical Manuals @ 250 copies | Copy | 500.00 | 500.00 | 10.00 | - | - | 5,000.00 | - | - | 5,000.00 | 10,000.00 | |
| Sub-total Activity 3.7 | | | | | | | | | | - | - | 7,000.00 | - | - | 5,000.00 | 12,000.00 |
| Activity 3.8: Establish 4 CSEs on bamboo business to be run by local communities using revolving funds | Q1-4 | 27 | a. | Sub-contract 7: NGO for technical assistance on bamboo business | Contract | 1.00 | - | 6,400.00 | - | 6,400.00 | - | - | - | - | 6,400.00 | |
| | Y2 | 65 | b. | Revolving funds | CSE | - | 2.00 | 5,000.00 | - | - | - | - | 10,000.00 | - | 10,000.00 | |
| Sub-total Activity 3.8 | | | | | | | | | | - | 6,400.00 | - | - | 10,000.00 | - | 16,400.00 |
| Activity 3.9: Organize a national workshop on dissemination of project results nation wide | Q4 | Y3 | 28 | Sub-contract 8: PED for National Workshop 2 on Project results dissemination | Package | 0.53 | 0.47 | 19,000.00 | - | - | 10,000.00 | - | - | 9,000.00 | 19,000.00 | |
| Sub-total Activity 3.9 | | | | | | | | | | - | - | 10,000.00 | - | - | 9,000.00 | 19,000.00 |
| Total Output 3 | | | | | | | | | 157,400.00 | 42,410.00 | 43,710.00 | 72,550.00 | 52,550.00 | 41,100.00 | 409,720.00 | |
| Total Project cost | | | | | | | | | 223,963.33 | 65,083.33 | 56,143.34 | 100,400.00 | 66,100.00 | 50,450.00 | 562,140.00 | |

| | | | | | | | | | | | | | | | | |
|----------------------------------|--------------|-------------------------------------|--------|--------------------------------|---------|----------|----------|-------------------|-------------------|------------------|-------------------|------------------|------------------|-------------------|-----------|--|
| Non-activity based | Q1-4 Y1-3 | <u>Key Personnel</u> | | | | | | | | | | | | | | |
| | | 11 | a. | Project Coordinator | MM | 36.00 | 36.00 | 2,000.00 | 21,000.00 | 21,000.00 | 21,000.00 | 3,000.00 | 3,000.00 | 3,000.00 | 72,000.00 | |
| | | 12 | b. | Secretary | MM | 36.00 | - | 400.00 | 4,800.00 | 4,800.00 | 4,800.00 | - | - | - | 14,400.00 | |
| | | 17 | c. | Field Supervisor | MM | 36.00 | 36.00 | 600.00 | 4,800.00 | 4,800.00 | 4,800.00 | 2,400.00 | 2,400.00 | 2,400.00 | 21,600.00 | |
| | | 13 | d. | Technicians | MM | - | 72.00 | 300.00 | - | - | - | 7,200.00 | 7,200.00 | 7,200.00 | 21,600.00 | |
| | | | | <u>Office</u> | | | | | | | | | | | | |
| | | 66 | e. | Office space, 36 months, 40 m2 | Month | - | 36.00 | 500.00 | - | - | - | 6,000.00 | 6,000.00 | 6,000.00 | 18,000.00 | |
| | | 44 | f. | Office facilities | Set | - | 1.00 | 5,000.00 | - | - | - | 1,670.00 | 1,670.00 | 1,660.00 | 5,000.00 | |
| | | 54 | g. | Consumable, stationary | Month | - | 36.00 | 250.00 | - | - | - | 3,000.00 | 3,000.00 | 3,000.00 | 9,000.00 | |
| | | | | <u>Duty travel</u> | | | | | | | | | | | | |
| | | 36 | h. | Air tickets | Trip | 12.00 | - | 200.00 | 800.00 | 800.00 | 800.00 | - | - | - | 2,400.00 | |
| | | 31 | i. | DSA, 4 days/trip | MD | 48.00 | - | 80.00 | 1,280.00 | 1,280.00 | 1,280.00 | - | - | - | 3,840.00 | |
| | | 32 | j. | Local transport | TD | 48.00 | - | 60.00 | 960.00 | 960.00 | 960.00 | - | - | - | 2,880.00 | |
| | | | | <u>Others</u> | | | | | | | | | | | | |
| | | 67 | k. | PSC meetings | Meeting | 2.00 | 2.00 | 1,500.00 | 1,000.00 | 1,000.00 | 1,000.00 | 1,000.00 | 1,000.00 | 1,000.00 | 6,000.00 | |
| 64 | l. | Financial auditing | Yearly | 2.00 | 1.00 | 1,500.00 | 1,000.00 | 1,000.00 | 1,000.00 | 500.00 | 500.00 | 500.00 | 4,500.00 | | | |
| 61 | m. | Publication, 8 reports @ 100 copies | Copy | 800.00 | - | 10.00 | - | 4,000.00 | 4,000.00 | - | - | - | 8,000.00 | | | |
| 68 | n. | Miscellaneous, sundry | | 1.00 | - | 4,200.00 | 1,400.00 | 1,400.00 | 1,400.00 | - | - | - | 4,200.00 | | | |
| Total Non-activity based | | | | | | | | 37,040.00 | 41,040.00 | 41,040.00 | 24,770.00 | 24,770.00 | 24,760.00 | 193,420.00 | | |
| Grand Total Project Costs | | | | | | | | 261,003.33 | 106,123.33 | 97,183.34 | 125,170.00 | 90,870.00 | 75,210.00 | 755,560.00 | | |

3.4.2 Consolidated budget by component

| Category | Description | Total | Year 1 | Year 2 | Year 3 |
|------------|---|-------------------|------------------|------------------|------------------|
| 10 | Personnel | | | | |
| 11 | Project coordinator | 72,000.00 | 24,000.00 | 24,000.00 | 24,000.00 |
| 12 | Secretary | 14,400.00 | 4,800.00 | 4,800.00 | 4,800.00 |
| 13 | Technicians | 37,800.00 | 10,200.00 | 13,800.00 | 13,800.00 |
| 14 | Laborers | 18,600.00 | 300.00 | 9,300.00 | 9,000.00 |
| 15 | International Consultants | 20,000.00 | 20,000.00 | - | - |
| 16 | Other Professionals | 5,360.00 | 2,000.00 | 1,680.00 | 1,680.00 |
| 17 | Field Supervisor | 21,600.00 | 7,200.00 | 7,200.00 | 7,200.00 |
| 19 | Sub total | 189,760.00 | 68,500.00 | 60,780.00 | 60,480.00 |
| 20 | Sub contracts | | | | |
| 21 | Bamboo growing stock survey | 20,000.00 | 20,000.00 | - | - |
| 22 | Feasibility study on bamboo utilization | 4,000.00 | 4,000.00 | - | - |
| 23 | PEO for National Workshop 1 on bamboo industry development | 18,000.00 | 18,000.00 | - | - |
| 24 | Establishment of bamboo information system | 4,000.00 | 1,333.33 | 1,333.33 | 1,333.34 |
| 25 | Establishment of bamboo plantation demonstration | 18,000.00 | 18,000.00 | - | - |
| 26 | Demonstration of technologies for production of bamboo planting materials | 16,000.00 | 16,000.00 | - | - |
| 27 | NGO for technical assistance on bamboo business | 6,400.00 | - | 6,400.00 | - |
| 28 | PEO for National Workshop 2 on Project results dissemination | 19,000.00 | - | - | 19,000.00 |
| 29 | National Consultants | 33,000.00 | 23,000.00 | 8,000.00 | 2,000.00 |
| 210 | Sub total | 138,400.00 | 77,333.33 | 7,733.33 | 20,333.34 |
| 30 | Duty Travel | | | | |
| 31 | DSA, domestic | 39,300.00 | 9,040.00 | 17,450.00 | 12,810.00 |
| 32 | Local transport, domestic | 11,700.00 | 4,530.00 | 4,410.00 | 2,760.00 |
| 33 | International air tickets | 3,000.00 | 3,000.00 | - | - |
| 34 | Local transport overseas | - | - | - | - |
| 35 | DSA international | 7,200.00 | 7,200.00 | - | - |
| 36 | Domestic air tickets | 12,800.00 | 800.00 | 7,000.00 | 5,000.00 |
| 39 | Sub total | 74,000.00 | 24,570.00 | 28,860.00 | 20,570.00 |

| | | | | | |
|------------|--|-------------------|-------------------|------------------|------------------|
| 40 | Capital Items | | | | |
| 41 | PC, equipment and facilities | 7,500.00 | 7,500.00 | - | - |
| 42 | Harvesting equipment and facilities | 5,000.00 | 2,500.00 | 2,500.00 | - |
| 43 | Building | 60,000.00 | 45,000.00 | 15,000.00 | - |
| 44 | Office facilities | 9,000.00 | 5,670.00 | 1,670.00 | 1,660.00 |
| 45 | Processing machines, equipment and | 70,000.00 | 70,000.00 | - | - |
| 49 | Sub total | 151,500.00 | 130,670.00 | 19,170.00 | 1,660.00 |
| 50 | Consumables items | | | | |
| 51 | Consumables (plot) | 3,600.00 | 1,800.00 | 1,800.00 | - |
| 52 | Utilities | 36,000.00 | 12,000.00 | 12,000.00 | 12,000.00 |
| 53 | Consumables (materials) | 7,200.00 | 2,400.00 | 2,400.00 | 2,400.00 |
| 54 | Stationery | 9,000.00 | 3,000.00 | 3,000.00 | 3,000.00 |
| 55 | Miscellaneous consumables | 16,800.00 | 5,000.00 | 5,900.00 | 5,900.00 |
| 56 | Printed Materials | 17,500.00 | 2,500.00 | 7,500.00 | 7,500.00 |
| 59 | Sub total | 90,100.00 | 26,700.00 | 32,600.00 | 30,800.00 |
| 60 | Miscellaneous | | | | |
| 61 | Publication and distribution | 47,000.00 | 16,000.00 | 10,500.00 | 20,500.00 |
| 62 | Miscellaneous meetings | 14,500.00 | 6,200.00 | 5,650.00 | 2,650.00 |
| 63 | Web provider rental | 6,000.00 | 2,000.00 | 2,000.00 | 2,000.00 |
| 64 | Financial auditing | 4,500.00 | 1,500.00 | 1,500.00 | 1,500.00 |
| 65 | Revolving funds | 10,000.00 | - | 10,000.00 | - |
| 66 | Office space | 18,000.00 | 6,000.00 | 6,000.00 | 6,000.00 |
| 67 | PSC meetings | 6,000.00 | 2,000.00 | 2,000.00 | 2,000.00 |
| 68 | Sundry | 5,800.00 | 1,700.00 | 2,200.00 | 1,900.00 |
| 69 | Sub total | 111,800.00 | 35,400.00 | 39,850.00 | 36,550.00 |
| 70 | National management cost | 43,687.50 | | | |
| 80 | Project monitoring and administration | | | | |
| 81 | ITTO monitoring & review | 18,000.00 | | | |
| 82 | ITTO mid-term evaluation | - | | | |
| 83 | ITTO final evaluation | - | | | |
| 84 | ITTO ex-post evaluation | 15,000.00 | | | |
| | Sub Total (11 - 84) | 832,247.50 | | | |
| 85 | ITTO Programme support (8%) | 39,784.80 | | | |
| 100 | GRAND TOTAL | 872,032.30 | | | |

3.4.3 ITTO Yearly Budget

| Category | Description | Total | Year 1 | Year 2 | Year 3 |
|------------|---|-------------------|------------------|------------------|------------------|
| 10 | Personnel | | | | |
| 11 | Project coordinator | 63,000.00 | 21,000.00 | 21,000.00 | 21,000.00 |
| 12 | Secretary | 14,400.00 | 4,800.00 | 4,800.00 | 4,800.00 |
| 13 | Technicians | - | - | - | - |
| 14 | Laborers | 600.00 | 300.00 | 300.00 | - |
| 15 | International Consultants | 20,000.00 | 20,000.00 | - | - |
| 16 | Other Professionals | 5,360.00 | 2,000.00 | 1,680.00 | 1,680.00 |
| 17 | Field Supervisor | 14,400.00 | 4,800.00 | 4,800.00 | 4,800.00 |
| 19 | Sub total | 117,760.00 | 52,900.00 | 32,580.00 | 32,280.00 |
| 20 | Sub contracts | | | | |
| 21 | Bamboo growing stock survey | 16,000.00 | 16,000.00 | - | - |
| 22 | Feasibility study on bamboo utilization | 4,000.00 | 4,000.00 | - | - |
| 23 | PEO for National Workshop 1 on bamboo industry development | 9,000.00 | 9,000.00 | - | - |
| 24 | Establishment of bamboo information system | 4,000.00 | 1,333.33 | 1,333.33 | 1,333.34 |
| 25 | Establishment of bamboo plantation demonstration | 12,000.00 | 12,000.00 | - | - |
| 26 | Demonstration of technologies for production of bamboo planting materials | - | - | - | - |
| 27 | NGO for technical assistance on bamboo | 6,400.00 | - | 6,400.00 | - |
| 28 | PEO for National Workshop 2 on Project results dissemination | 10,000.00 | - | - | 10,000.00 |
| 29 | National Expert | 33,000.00 | 23,000.00 | 8,000.00 | 2,000.00 |
| 210 | Sub total | 94,400.00 | 42,333.33 | 7,733.33 | 11,333.34 |
| 30 | Duty Travel | | | | |
| 31 | DSA, domestic | 33,000.00 | 9,040.00 | 14,300.00 | 9,660.00 |
| 32 | Local transport, domestic | 5,400.00 | 3,480.00 | 960.00 | 960.00 |
| 33 | International air tickets | 3,000.00 | 3,000.00 | - | - |
| 34 | Local transport overseas | - | - | - | - |
| 35 | DSA international | 7,200.00 | 7,200.00 | - | - |
| 36 | Domestic air tickets | 12,800.00 | 800.00 | 7,000.00 | 5,000.00 |
| 39 | Sub total | 61,400.00 | 23,520.00 | 22,260.00 | 15,620.00 |

| | | | | | |
|------------|--|-------------------|-------------------------------|------------------|------------------|
| 40 | Capital Items | | | | |
| 41 | PC, equipment and facilities | 5,000.00 | 5,000.00 | - | - |
| 42 | Harvesting equipment and facilities | 5,000.00 | 2,500.00 | 2,500.00 | - |
| 43 | Building | 30,000.00 | 30,000.00 | - | - |
| 44 | Office facilities | - | - | - | - |
| 45 | Processing machines, equipment and | 49,000.00 | 49,000.00 | - | - |
| 49 | Sub total | 89,000.00 | 86,500.00 | 2,500.00 | - |
| 50 | Consumables items | | | | |
| 51 | Consumables (plot) | 3,600.00 | 1,800.00 | 1,800.00 | - |
| 52 | Utilities | 18,000.00 | 6,000.00 | 6,000.00 | 6,000.00 |
| 53 | Consumables (materials) | 7,200.00 | 2,400.00 | 2,400.00 | 2,400.00 |
| 54 | Stationery | - | - | - | - |
| 55 | Miscellaneous consumables | 8,400.00 | 2,500.00 | 2,950.00 | 2,950.00 |
| 56 | Printed Materials | 10,000.00 | - | 5,000.00 | 5,000.00 |
| 59 | Sub total | 47,200.00 | 12,700.00 | 18,150.00 | 16,350.00 |
| 60 | Miscellaneous | | | | |
| 61 | Publication and distribution | 36,000.00 | 14,000.00 | 8,500.00 | 13,500.00 |
| 62 | Miscellaneous meetings | 3,750.00 | 1,350.00 | 1,200.00 | 1,200.00 |
| 63 | Web provider rental | 3,000.00 | 1,000.00 | 1,000.00 | 1,000.00 |
| 64 | Financial auditing | 3,000.00 | 1,000.00 | 1,000.00 | 1,000.00 |
| 65 | Revolving funds | - | - | - | - |
| 66 | Office space | - | - | - | - |
| 67 | PSC meetings | 3,000.00 | 1,000.00 | 1,000.00 | 1,000.00 |
| 68 | Sundry | 5,800.00 | 1,700.00 | 2,200.00 | 1,900.00 |
| 610 | Sub total | 54,550.00 | 20,050.00 | 14,900.00 | 19,600.00 |
| 70 | National management cost | - | (See executing agency budget) | | |
| 80 | Project monitoring and administration | | | | |
| 81 | ITTO monitoring & review | 18,000.00 | | | |
| 82 | ITTO mid-term evaluation | - | | | |
| 83 | ITTO final evaluation | - | | | |
| 84 | ITTO ex-post evaluation | 15,000.00 | | | |
| | Sub Total (11 - 84) | 497,310.00 | | | |
| 85 | ITTO Programme support (8%) | 39,784.80 | | | |
| 100 | GRAND TOTAL | 537,094.80 | | | |

3.4.4 Executing Agency Yearly Budget (Gol)

| Category | Description | Total | Year 1 | Year 2 | Year 3 |
|------------|---|------------------|------------------|------------------|------------------|
| 10 | Personnel | | | | |
| 11 | Project coordinator | 9,000.00 | 3,000.00 | 3,000.00 | 3,000.00 |
| 12 | Secretary | - | - | - | - |
| 13 | Technicians | 37,800.00 | 10,200.00 | 13,800.00 | 13,800.00 |
| 14 | Laborers | 18,000.00 | - | 9,000.00 | 9,000.00 |
| 15 | International Consultants | - | - | - | - |
| 16 | Other Professionals | - | - | - | - |
| 17 | Field Supervisor | 7,200.00 | 2,400.00 | 2,400.00 | 2,400.00 |
| 19 | Sub total | 72,000.00 | 15,600.00 | 28,200.00 | 28,200.00 |
| 20 | Sub contracts | | | | |
| 21 | Bamboo growing stock survey | 4,000.00 | 4,000.00 | - | - |
| 22 | Feasibility study on bamboo utilization | - | - | - | - |
| 23 | PEO for National Workshop 1 on bamboo industry development | 9,000.00 | 9,000.00 | - | - |
| 24 | Establishment of bamboo information system | - | - | - | - |
| 25 | Establishment of bamboo plantation demonstration | 6,000.00 | 6,000.00 | - | - |
| 26 | Demonstration of technologies for production of bamboo planting materials | 16,000.00 | 16,000.00 | - | - |
| 27 | NGO for technical assistance on bamboo business | - | - | - | - |
| 28 | PEO for National Workshop 2 on Project results dissemination | 9,000.00 | - | - | 9,000.00 |
| 29 | National Expert | - | - | - | - |
| 210 | Sub total | 44,000.00 | 35,000.00 | - | 9,000.00 |
| 30 | Duty Travel | | | | |
| 31 | DSA, domestic | 6,300.00 | - | 3,150.00 | 3,150.00 |
| 32 | Local transport, domestic | 6,300.00 | 1,050.00 | 3,450.00 | 1,800.00 |
| 33 | International air tickets | - | - | - | - |
| 34 | Local transport overseas | - | - | - | - |
| 35 | DSA international | - | - | - | - |
| 36 | Domestic air tickets | - | - | - | - |
| 39 | Sub total | 12,600.00 | 1,050.00 | 6,600.00 | 4,950.00 |

| | | | | | |
|------------|--|-------------------|------------------|------------------|------------------|
| 40 | Capital Items | | | | |
| 41 | PC, equipment and facilities | 2,500.00 | 2,500.00 | - | - |
| 42 | Harvesting equipment and facilities | - | - | - | - |
| 43 | Building | 30,000.00 | 15,000.00 | 15,000.00 | - |
| 44 | Office facilities | 9,000.00 | 5,670.00 | 1,670.00 | 1,660.00 |
| 45 | Processing machines, equipment and | 21,000.00 | 21,000.00 | - | - |
| 49 | Sub total | 62,500.00 | 44,170.00 | 16,670.00 | 1,660.00 |
| 50 | Consumables items | | | | |
| 51 | Consumables (plot) | - | - | - | - |
| 52 | Utilities | 18,000.00 | 6,000.00 | 6,000.00 | 6,000.00 |
| 53 | Consumables (materials) | - | - | - | - |
| 54 | Stationery | 9,000.00 | 3,000.00 | 3,000.00 | 3,000.00 |
| 55 | Miscellaneous consumables | 8,400.00 | 2,500.00 | 2,950.00 | 2,950.00 |
| 56 | Printed Materials | 7,500.00 | 2,500.00 | 2,500.00 | 2,500.00 |
| 59 | Sub total | 42,900.00 | 14,000.00 | 14,450.00 | 14,450.00 |
| 60 | Miscellaneous | | | | |
| 61 | Publication and distribution | 11,000.00 | 2,000.00 | 2,000.00 | 7,000.00 |
| 62 | Miscellaneous meetings | 10,750.00 | 4,850.00 | 4,450.00 | 1,450.00 |
| 63 | Web provider rental | 3,000.00 | 1,000.00 | 1,000.00 | 1,000.00 |
| 64 | Financial auditing | 1,500.00 | 500.00 | 500.00 | 500.00 |
| 65 | Revolving funds | 10,000.00 | - | 10,000.00 | - |
| 66 | Office space | 18,000.00 | 6,000.00 | 6,000.00 | 6,000.00 |
| 67 | PSC meetings | 3,000.00 | 1,000.00 | 1,000.00 | 1,000.00 |
| 68 | Sundry | - | - | - | - |
| 69 | Sub total | 57,250.00 | 15,350.00 | 24,950.00 | 16,950.00 |
| 70 | National management cost | 43,687.50 | | | |
| 80 | Project monitoring and administration | | | | |
| 81 | ITTO monitoring & review | - | | | |
| 82 | ITTO mid-term evaluation | - | | | |
| 83 | ITTO final evaluation | - | | | |
| 84 | ITTO ex-post evaluation | - | | | |
| | Sub Total (11 - 84) | 334,937.50 | | | |
| 85 | ITTO Programme support (8%) | - | | | |
| 100 | GRAND TOTAL | 334,937.50 | | | |

3.5. Assumptions, risks, sustainability

3.5.1. Assumptions and risks

The vertical logic of the project is that full execution of planned activities will deliver the outputs; if the outputs are delivered, the specific objective shall be achieved which in turn contribute to achieving the development objective. The assumptions made as regard outputs are basically conditions that must prevail to facilitate delivery of the outputs, **namely availability of lands for demonstration plots and processing plant in time and continue support by government authorities as well as stakeholders.**

At the specific objective level, the conditions that must prevail for its achievement are growing interest of stakeholders, especially business sector, government authorities and local communities in bamboo industry development. The conditions must also prevail in order to sustain impacts of the project which are continued use of project outputs by primary beneficiaries, availability of bamboo products as substitutes for wood products, and increased income of local communities.

Summary of potential risks and mitigating measures

| No. | Potential risks | Mitigating measures |
|-----|---|--|
| 1. | <u>Lands available in time</u> | <u>Early communication with the Bangli District Government</u> |
| 2. | Weakening support of government authorities | Continued dissemination of information through workshop, dialogues and discussions |
| 3. | Interest of stakeholders continues low | Dissemination of information through workshop, dialogues, discussions, formation of stakeholder forum, launching of aggressive national campaign |

It should be noted that decision making as regards land allocation normally takes time. Therefore, it is critical to start land allocation process at the earliest possible stage.

Weakening support by authorities may affect designation of land for the project thus delay project operations and impinge on counter budget allocation which may jeopardize execution of particular activities. It is worth emphasizing that bamboo industry development will never progress without participation of stakeholders, mainly local communities, business sector and local governments. Therefore, it is imperative to build up communication with stakeholders from the early stage of project implementation, through various channels and means available to the project.

As has been indicated elsewhere, a monitoring plan will be developed prior to implementing the project. In such a plan, monitoring of risk will be carried out through validity assessment of the assumptions made noting that risk is occurred when relating assumptions do not hold any longer.

3.5.2. Sustainability

Sustainability of the project results is very much rests with the stakeholders. It is in the interest of local communities to utilize the skills they have learned from the project. The skills they learned will now allow communities to work with bamboo industries either in the up-stream, processing or down-stream activities. It must be so because working with the industries entail additional income. The critical point therefore is to convince local communities to participate in the training program to be offered by the project.

As reliable information on bamboo resource base in terms of quantity, quality and distribution, on market demand and on processing technologies are available, potential investors and financial institutions are expected to become attracted in doing investment. Availability of trained people in a greater number, especially local community members, will also serve as an incentive to invest, thus sustaining the project result.

As regards concerned government authorities, there is no question on their support for the project. Recall that the Ministry of Forestry has already promulgated bamboo as the prime commodity for national development. This policy of bamboo industry development should become a strong basis for resource allocation. However, concerned authorities have to continue play their part. Enhanced training program must be continuously implemented not only in Bali but also in other provinces of Indonesia. The bamboo information system developed under the project must be ensured operational and publicly accessible and so is the stakeholder forum. In addition, concerned authorities led by the Ministry of Forestry should consistently launch an aggressive bamboo campaign program to increase not only production and export but also domestic consumption of bamboo products as perfect substitutes for wood products in many industrial and household applications in Indonesia.

In essence, the primary beneficiaries of the project are gaining benefits from the project and this gain will serve as a strong incentive for them to continue utilizing the experience and skills they learned from the project. The government should play its part by consistently creating a favorable business environment through implementation of adequate policies with a view to developing a strong, efficient, and sustainable national bamboo industry.

Increased utilization of bamboo resources is expected to take place through larger investment, enhanced institutional framework and availability of skillful labor notably community members including women. Increased utilization is brought about by expanded activities on processing of culms by firms and households, on harvesting and hauling of culms, on planting of bamboo and on marketing of bamboo products as well as on production and trade of inputs. All of these activities will certainly create greater job opportunities and larger income to involved firms, households and individuals. That is to say that, local economic activities are accelerating and generating additional income to the society. The local governments also will be able to increase revenue through expanded tax base. Additional financial gains accrued to local stakeholders will serve as a strong incentive for them to sustain bamboo industry development.

Part 4: IMPLEMENTATION ARRANGEMENTS

4.1. Organization Structure and Stakeholder Involvement Mechanism

4.1.1. Executing agency and partners

The Executing Agency (EA) of the project will be DGWMSF of the Ministry of Forestry which has already acquired experience in implementing ITTO –assisted projects. The key obligations of the EA include selection of key project personnel, provision of office space and facilities, and allocation of counter-budget through the state budget system. Profile of DGLRSF appears in Annex 1.

Bangli District Forestry Agency (BDFA) will be the collaborating agency (CA) of the project. This agency has also gained experience in implementing ITTO-assisted projects successfully. The major obligations of BPFA include development of coordination with the district government, execution of selected activities in accordance with its expertise and resources. BDFA and DGWMSF shall sign a memorandum of understanding (MOU) establishing the tasks and responsibilities of each. **BDFA has been deliberately chosen as the CA as this is the institution that will continue implementing critical activities after project completion, consistent with the on-going decentralization process.**

Partners of the EA and CA in implementing the project will include Consultants, the Bali Provincial Industry and Trade Agencies, Universities and NGOs. The EA will appoint a full-timer Project Coordinator (PC) to manage operations of the project on a day-to-day basis.

The organizational chart of the project is pictured in Annex 2.

4.1.2. Project management team

The project management team (PMT) will consist of the Project Coordinator (PC), Project Secretary (PS) and field supervisor (FSs). For a project of the kind, there is a need to employ full timer PC, PS and FSs to ensure the smooth implementation of the project. As appropriate, planned activities will be executed with the assistance of partners mainly Consultants, NGOs, Universities and district as well as authorities on industry development and trade.

The curricula vitae of the professionals to be appointed by the EA along with, their terms of reference appear in Annex 4. The terms of references of PC, PS, selected technicians and partners are presented in Annex 5.

4.1.3. Project steering committee (PSC)

The Executing Agency will establish a PSC with the primarily roles to oversee progress in project implementation in light of the logical framework of the project, approve workplan and associated budget, and review needed changes in budgets and activities. Membership of the PSC will be:

- A chairperson appointed by the executing agency
- A representative of Collaborating Agency
- A representative of ITTO
- Representatives of Bali Provincial Forestry Agency
- Representatives of donors
- Representatives of universities ,NGOs, private sector and local communities
- The Project Coordinator as the secretary of the PSC

The Committee shall meet at least once a year; a special meeting may be called for by the Executing Agency at any time as need arises. The official language of any PSC meeting is English.

4.1.4. Stakeholder involvement mechanism

A stakeholder forum will be established under the project where provincial and local authorities, local communities, NGOs, investors, and other groups interested in bamboo industry development may meet periodically to exchange views and ideas, develop propositions and make recommendations to the executing agency in view of improving efficiency of project implementation. While the forum has no formal responsibility for the project, its advices and recommendations are invaluable inputs to the project.

4.2. Reporting, review, monitoring and evaluation

A project monitoring system will be developed prior to commencing with project operations. Prerequisite to delivering planned outputs on time in accordance with the LFM is proper execution of individual activities pertaining to each of the outputs. Therefore, progress in implementation of individual activities should be closely monitored. The monitoring system to be developed indicates pre-project situation, indicators of progress employed, measuring techniques, frequency of monitoring and the party responsible for conducting the monitoring. Results of the monitoring should be reviewed, first internally by the project management team and then by the PSC.

The monitoring system will be used by the project management as the guide to conduct activities on monitoring of the progress in implementation of activities. Monitoring activities may be conducted by the Project Coordinator or by any other authorized parties including NGOs, universities and R&D institutions on his/her behalf. Monitoring results will be documented as a progress report to be reviewed and assessed by the PSC wherein main stakeholders are adequately represented.

A number of reports will be produced in accordance with the ITTO Manual on Standard Operating Procedures as follows:

- Inception report
 - To be submitted after the signing of agreement between ITTO, Executing Agency and GOI.
 - Contains such matters as confirmation of the availability of office space and facilities, opening of a separate bank account in internationally recognized bank, proposed key project personnel and any changes that might have occurred since the project formulation stage.
 - The first year workplan and MOU between DGLRSF and BDFA will be annexed to the report.
- Yearly Plan of Operation (YPO)
 - To be submitted yearly prior to commencing with operations for endorsement by PSC, as appropriate, and by ITTO.
 - The first year YPO shall be attached to the Inception Report; the subsequent ones shall be submitted, at the latest ten weeks before the beginning of the planned year.
 - ITTO approves the YPO upon recommendation of the PSC.
- Progress report
 - Present information on executed activities during the period covered by the report, achieved output(s) as appropriate, and inputs applied.
 - The report is to be submitted bi-annually or as requested by ITTO.
- Technical report
 - Contains technical and scientific data, analysis of data and the project results
 - A technical report may pertain to one single activity, two or more activities or one output depending on the weighted importance of the activities; the report must present procedure and methodologies adopted, the data generated, the results achieved and the conclusions reached.
 - The project plans to produce at least five technical reports.
- Financial report
 - Annual report is to be submitted to ITTO within three months after the end of the current financial year.
 - A final report is to be submitted within four months after the completion of planned activities.

- The project's financial statement will be audited by registered independent public accountant to be appointed by the Executing Agency with the prior endorsement of ITTO.
- Completion report
 - To be submitted within three months of project completion.
 - The report summarizes the activities, inputs and expenditures, achieved outputs and objectives during the entire implementation phase.
 - The report highlights the most critical differences between planned and realized project elements using the original project document as reference, and lessons learned from implementation of the project.

4.3. Dissemination and mainstreaming of project learning

4.3.1. Dissemination of project learning

Project learning and results will be disseminated through the various means and channels, during the implementation phase and after project completion.

- Bamboo information system
Contains any information on the various aspects of the project; as the system is publicly accessible, interested users are benefited by the system.
- Technical reports
Will be published and widely distributed in stages depending on the completion of such reports.
- Brochures/technical documents
Are to be published quarterly and distributed nationwide. The brochures present findings, results of individual activities in a popular fashion that they are attractive in appearance and easy to digest even by common people.
- TV broadcasting
Delivery of speeches by the Minister of Forestry and other high-rank officials will be arranged through television channels with nation-wide coverage. While such speeches focus on campaigning the national bamboo industry development, they also will include project learning and results.
- National workshops
The main purpose of organizing one national workshop near the end of the project, to be attended by main stakeholders, is to disseminate project learning and results.
- Completion report
Will be published and distributed nationwide; interested ITTO member countries may also obtain the report from the executing agency upon request or through ITTO.

4.3.2. Mainstreaming of project learning

Project learning and results will be having far reaching implications on national policies and plans for bamboo industry development. Observations on bamboo demo plots, both natural and plantation stands, will provide data and information to be used in formulation of national policies on bamboo resource-base development. The government officials that have been trained in the various aspects of bamboo industry development should now have improved capacity in decision making regarding the industry. Training results will also be useful for developing sound training programs for adoption by other provinces of the country.

Annex 1: Profile of the Executing Agency

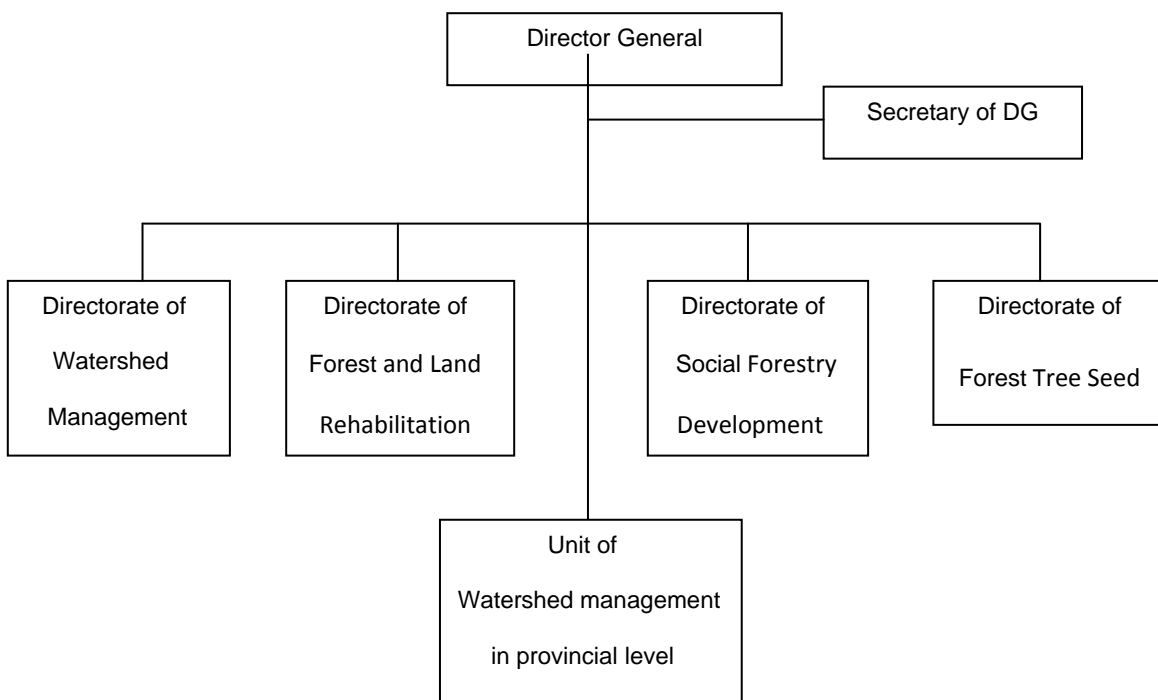
BACKGROUND

A. Profile of the Executing Agency

The Executing Agency of the project is the Directorate of Social Forestry Development under the Directorate General of Watershed Management and Social Forestry, the Ministry of Forestry. This institution holds main functions as follows:

- a) Preparing the formulation of policy in the Ministry in the field of watershed management and social forestry
- b) Formulating standards, norms, guidance, criteria and procedures related to the fields of watershed management, rehabilitation of forest and land, social forestry and seedlings of forest plants.
- c) Providing technical guidance and evaluation on the implementation of the policy, standards,
- d) Norms, guidance, criteria, and procedure related to the fields of watershed management, rehabilitation on forest and land, social forestry and seedlings of forest plants.

The organization structure of the Directorate General of Land Rehabilitation and Social Forestry is as follow:



DG Watershed management and social forestry development has local supporting offices known as Technical Implementation Unit/TIU that consist of 36 centers of Watershed Management, 6 Centers of Forest Tree Seed, 1 Center of Natural Silk production Development (*Balai Persuteraan Alam*), and 2 Centers of Mangrove Management.

INFRASTRUCTURE

Regarding the infrastructure, the Directorate of Watershed Management and Social Forestry Development has 45 unit offices in some places all over Indonesia. The center and unit offices are already connected to a 2 Mbps bandwidth of Internet connection and all staff has each personal computer. And also supported by GIS and GPS devices, libraries, mini laboratory for natural silk and seed production, several site model for land rehabilitation and social forestry activities, etc.

BUDGET

Within the last three years, the budget of the Directorate of Social Forestry Development is as follows:

| Activities | 2008 (USD) | 2009 (USD) | 2010 (USD) |
|----------------------------------|-------------------|-------------------|-------------------|
| Operational and Maintenance Cost | 286,619 | 292,425 | 276,222 |
| Publication | 158,388 | 159,589 | 87,687 |
| Planning Programs | 1,169,368 | 1,301,831 | 1,058,431 |
| Training Programs | 142,811 | 104,692 | 64,976 |
| TOTAL | 1,757,186 | 1,858,536 | 1,487,316 |

Note: USD 1 = IDR 10,500

PERSONNEL

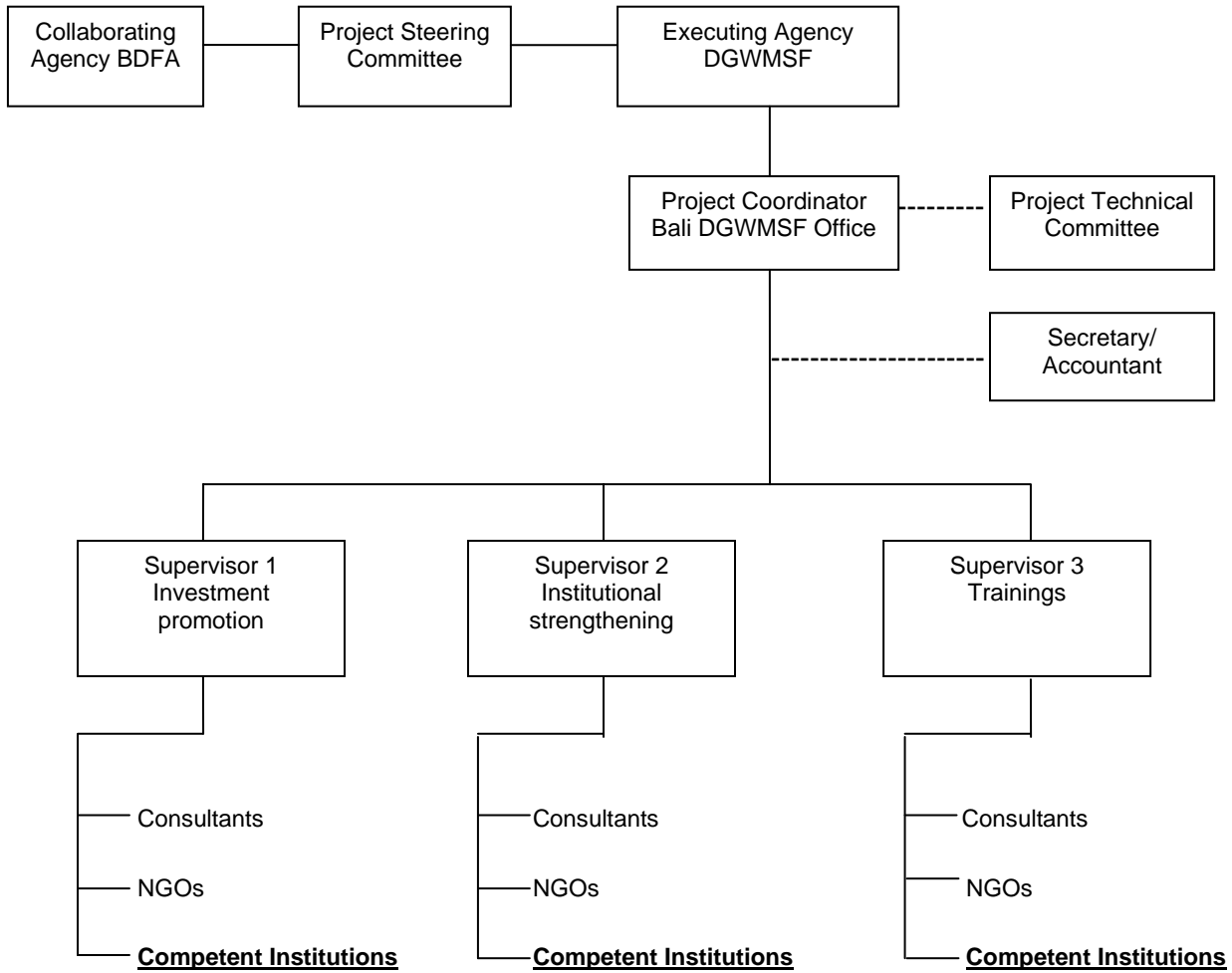
The personnel within the DG of Watershed Management and Social Forestry Development is described as the following:

| | |
|---------------------------|-----------|
| With Postgraduate Degrees | 68 |
| With Graduate Degrees | 95 |
| Middle-level Technicians | 114 |
| Administrative Personnel | 12 |
| TOTAL PERSONNEL | 49 |

In supporting the capacity of its staff, the Directorate of Social Forestry in collaboration with the Secretariat of the Directorate General for Watershed Management and Social Forestry Development conducted several training dealing with the Community forestry programme, social forestry as well as sustainable management of plantation forest; such training inter alia for forest planning, harvesting techniques, and entrepreneurship.

Annex 2: Project Organization Chart

Project Organization Chart



Annex 3: Profile of the Collaborating Agency

The implementation of the proposed project will be carried out in collaboration with the Bangli District Forestry Agency (BDFA).

1. Expertise of the Executing Agency

The Bali Provincial Forest Service is responsible for setting up policy, regulations, monitoring the supply and demand of timber, implementing rehabilitation program, and promoting social forestry in Bali in line with the policy, regulations and development programs of the Ministry of Forestry and the Provincial Government of Bali.

2. Infrastructure of the Executing Agency

The Bali Provincial Forest Service has 5 Sub Divisions: Administration, Planning, Land Rehabilitation, Forest Protection and Forest Products. It also has forest district offices across Bali. To support the replanting program, with the support of ITTO, it has established a permanent nursery in western Bali (10 Ha).

3. Budget

The budget of Bali Provincial Forest Service from 2007 – 2009 is as follows:

| Activities | Year (US \$) | | |
|------------------|--------------|-----------|-----------|
| | 2007 | 2008 | 2009 |
| Personnel | 1,036,215 | 1,231,223 | 1,136,561 |
| Duty travel | 77,172 | 104,419 | 122,452 |
| Capital | 47,256 | 36,318 | 85,909 |
| Consumable items | 114,222 | 113,744 | 90,989 |
| Miscellaneous | 123,678 | 123,827 | 119,977 |

4. Personnel

Staff members of the Bali Provincial Forest Service consist of 273 personnel, with university degrees in various fields (47 persons), high school graduate (179 persons) and others (28 persons).

Annex 4: Curricula vitae of personnel provided by EA

- Name : Mr. I Made Mursedana
Place/date of birth : Tabanan, Bali/ 21 August 1962
Employer : Forest Seed Center for Bali & Nusa Tenggara Region
Position : Senior Forest Ecosystem Supervisor
Educational background : University Graduate, Agricultural Socioeconomic Major
Professional training : - Principle of forest extension, 1993
- Management of seed sources, 1994
- Seed biology, 2001
- Development of seedlings for forest plantation, 2003
- ISO 17025, 2005
- Seed source certification, 2009
Work experience : - Seed orchard development & maintenance, 2005
- Seed quality standard development, 2009
- Survey on seed trees, 2010
- Name : Mr. Prajitno
Place/date of birth : Bantul, Indonesia/ 15 March 1964
Employer : Forest Seed Center for Bali & Nusa Tenggara Region
Position : Senior Forest Ecosystem Supervisor
Educational background : University Graduate, Crops Cultivation Major
Professional training : - Seed treatment, 2002
- Seed grading system, 2003
- Nursery development & management, 2006
- Bamboo processing technology, 2006
- Seed source supervisor, 2009
Work experience : - Establishment of seed source demonstration plots, 2001
- Development of seed orchard under ITTO project, 2002
- Establishment of seed orchards in Nusa Tenggara, 2010
- Name : Mr. Muhammad Satriadi
Place/date of birth : Pontianak, Indonesia/ 17 January 1981
Employer : Forest Seed Center for Bali & Nusa Tenggara Region
Position : Apprentice in Forest Ecosystem Supervisor
Educational background : University Graduate, Plant Genetics Major
Professional training : - Forest genetics, 2010
- Seed grading system, 2010
Work experience : - Involve in seed source certification in Nusa Tenggara, 2010
- Database updating on seed sources in Nusa Tenggara, 2010
- Involve in establishment of seed sources in Nusa Tenggara, 2010

Annex 5: Outlines of terms of reference of key personnel and other professionals to be funded by ITTO

| Position | Main tasks |
|---|---|
| Project Coordinator | <ul style="list-style-type: none"> • To manage project operations on a day-to-day basis • To prepare plans of operation, monitoring and evaluation • To prepare and submit documents and reports to EA and ITTO in accordance with the project agreement • To select consultants and other professionals to assist in project implementation • To organize meetings of PSC and PTC on progress in implementation |
| Project Secretary | <ul style="list-style-type: none"> • To assist PC in managing project operations • To manage project office, maintain office facilities • To organize meetings and travels • To do other tasks as requested by PC |
| Accountant | <ul style="list-style-type: none"> • To assist PC in financial management • To undertake book keeping and banking works • To assist in the selection of auditor and in conduct of financial auditing |
| IT Operator | <ul style="list-style-type: none"> • To input data on information system • To provide data and information for PC and Consultants as requested • |
| Field Supervisor | <ul style="list-style-type: none"> • To assist in developing operational plans • To supervise implementation of activities • To report on progress in field operations |
| National Consultant for Activity 1.1 (Sub-contract 1) | <ul style="list-style-type: none"> • To develop bamboo growing stock inventory technique • To determine size and distribution of samples • To undertake field surveys • To analyze field data and develop map • To prepare relevant technical report |
| National Consultant for Activity 1.2 | <ul style="list-style-type: none"> • To search, collect and collate data on market demand for bamboo products and processing technologies • To produce relevant technical report |
| National Consultant for Activity 1.3 (Sub-contract 2) | <ul style="list-style-type: none"> • To conduct study on feasibility of a bamboo industry development project using realistic assumptions and estimates on prices of inputs and products • To assess feasibility using social, financial and environmental criteria |
| National Consultant for Activity 1.4 | <ul style="list-style-type: none"> • To assess adequacy of economic infrastructure • To estimate average cost of transposing bamboo culms to planned plant site • To make recommendations to the local government for improving infrastructure and efficiency of transportation industry |
| PEO for Activities 1.5 & 3.9 (Sub-contract 3) | <ul style="list-style-type: none"> • To develop a plan of operation and associated budget with PC • To implement the operational plan • To produce and distribute a workshop report |
| National Consultant for Activity 2.3 (Sub-contract 4) | <ul style="list-style-type: none"> • To develop design of bamboo information system • To identify, procure and install necessary equipment and tools • To validate the system, produce technical manual and train operators |

| Position | Main tasks |
|--|--|
| National Consultant for Activity 2.5 | <ul style="list-style-type: none"> • To review existing policies • To develop bamboo management regime, discuss with stakeholders • To finalize policies on bamboo industry management for submission to government authorities |
| National Consultant For Activity 3.1 | <ul style="list-style-type: none"> • To set up demonstration plots for natural bamboo in four sub-districts • To identify efficient harvesting techniques and silviculture practices for residual stands • To produce technical manuals • To produce a relevant technical report |
| NGO for Activity 3.2 (Sub-contract 5) | <ul style="list-style-type: none"> • To identify 12 ha of land for bamboo planting in four sub-districts • To establish plantation with different treatments • To develop technical manual for plantation establishment • To produce a technical report |
| International Consultant (IC) for Activity 3.4 | <ul style="list-style-type: none"> • To identify appropriate processing technologies • To develop a procurement plan |
| National Consultant for Activity 3.4 | <ul style="list-style-type: none"> • To assist the IC in the identification of processing technologies and development of procurement plan |
| International Consultant for Activity 3.5 | <ul style="list-style-type: none"> • To install and test run purchased machines and equipment • To develop SOP for the processing plant |
| National Consultant for Activity 3.5 | <ul style="list-style-type: none"> • To assist in the execution of procurement plan • To assist the IC in performing his/her tasks |
| Professional Trainers (PT) For Activity 3.6 | <ul style="list-style-type: none"> • To develop training program and modules • To develop training time schedules • To conduct trainings |
| NGO for Activity 3.7 (Sub-contract 7) | <ul style="list-style-type: none"> • To undertake consultation with local communities and select participants • To establish 4 CSEs as bamboo business model • To train local communities in managing the CSEs • To develop the necessary technical manuals |

Annex 6: List of machinery and equipment for bamboo processing

| <u>Name of machine & equipment</u> | <u>Price estimate (US\$)</u> |
|--|------------------------------|
| Band saws | 2,000 |
| Jointers | 4,000 |
| Planners | 7,900 |
| Pressing equipment | 5,000 |
| Sanders | 600 |
| Compressor | 4,000 |
| Spray guns | 900 |
| Spindles | 14,000 |
| Preservation equipment | 5,000 |
| Oven | 15,000 |
| Miscellaneous | <u>11,600</u> |
| <u>TOTAL</u> | <u>70,000</u> |

Annex 7: Recommendations of the Forty-first Expert Panel and Loci of the Respective Revisions Made

| Assesment of the Expert Panel | Comments |
|--|---|
| <p><u>Overall Assessment</u></p> <p>The Panel acknowledged the relevance of the proposal to the Indonesian Government's programmes on sustainable utilization of Bamboo resources, and to the ITTO's programme on the promotion of Non-Timber Forest Products.</p> <p>The Panel noted that the overall project is well designed but that the proposal could be improved through;</p> <ul style="list-style-type: none"> - further clarification on how communities (and which members of those communities) will benefit from the project and allow for an active role for the private sector. Especially detailing how will the project develop and support small business enterprise development/cooperatives and what sort of market access will be achieved through this project; - demonstration on how governmental institutional capacity -which the proposal identifies as weak-will be improved (changes in policies and laws?), given the current government decentralization process taking place; - rearranging the budget; allowing for more personnel costs to be covered by the executing agency rather than ITTO <p><u>Specific Recommendations</u></p> <ol style="list-style-type: none"> 1. Provide a detailed map of the project area; 2. Clarify whether the project would be the unique action undertaken to implement the specified government decision, or whether the project would be complementing other government actions to implement this government decision and explain how governance issues, poor coordination, and lack of institutional capacity in planning, monitoring, and evaluation will be overcome; 3. Improve stakeholders and beneficiaries analysis: involvement and roles of private sector, communities including sub-groups such as women, government institutions as well as R&D institutions and universities. 4. Explain the strategy and method by adding more information on: <ul style="list-style-type: none"> o Bamboo processing technologies, o Small business enterprise development / cooperatives (for communities), o Demonstration plots in plantations and natural stands (Please clarify if the experimental plots will | <p>The overall assessment has been taking into account when addressing the respective specific recommendations</p> <p>Detailed map is presented on the appropriate front page Clarification is presented in Section 1.1; Sub-section 2.1.3</p> <p>Stakeholders analysis has been improved in Sub-section 2.1.2; Table 2.1; and Sub-section 3.5.2</p> <p>Additional information on implementation strategy and method has been provided in Section 3.2</p> |

| | |
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| <p>be based on plantation or natural stands.), and</p> <ul style="list-style-type: none"> o Capacity building scope; o Establishment of the revolving funds and the linkages with the existing banking system <p>5. Revise the Problem Tree to ensure there is only one key problem identified. Reformulate the 'effects' to focus on the bamboo issue and not on forest resources as a whole. Figure 2: Solution Tree should also be redone, per the revised Problem Tree;</p> <p>6. Revise Logical Framework Matrix:</p> <ul style="list-style-type: none"> a. The Development Objective and Specific Objective should be reworded. DO could perhaps read "Improve the management utilization and transformation of Bamboo resources for their sustainable use and benefits to local community" and SO could perhaps read "Initiate enhanced capacity among community and government stakeholders to develop and utilize bamboo in an efficient and sustainable manner, b. Ensure Outputs are time-bound, and outline the finished results in qualitative and quantitative terms, c. Measurable indicators for DO should be more realistic towards establishment of guidelines and/or policies to increase utilization of Bamboo in Bali, d. Explain how potential risks/mitigating measures will be monitored in the course of project implementation, and e. Key assumption should also be improved; <p>7. The amount of the ITTO budget for salaries should be substantially reduced by increasing contributions of the Executing Agency. Besides, as it appears in the proposal, GOI mostly contributes "miscellaneous" and some local transport, demonstrate the necessity to expend the allocated budget for study tours to China/India/Vietnam. Why is this necessary, as opposed to perhaps having an outside expert(s) come to Indonesia to conduct training(s), which could be more economically efficient?</p> | <p>The problem tree has been revised, only one key problem is identified; the objective tree has been revised accordingly in Figures 1 and 2</p> <p>The Logical Framework Matrix has been enhanced:</p> <ul style="list-style-type: none"> a. The development and specific objectives have been re-worded in Section 2.2 b. Revised indicators of the outputs are presented in Table 2.2 c. Revised indicators of the development objective is presented in Table 2.2 and Sub-section 2.2.1 d. Potential risk analysis has been improved in Sub-section 3.5.1 e. Key assumptions have been improved in Table 2.2 <p>The budget has been revised as follows:</p> <p><u>ITTO Contribution</u></p> <ul style="list-style-type: none"> • Reduced by US\$ 187,596 on project costs from US\$ 724,691 to US\$ 537,095 • The reduction was on Personnel (US\$ 92,600), Duty-travel (US\$ 34,000), Capital items (US\$ 24,000), Consumables (US\$ 8,600), Miscellaneous (US\$ 29,500), and ITTO's Programme Support Costs (US\$ 14,097). However, the Sub-contracts and ITTO's Monev costs were increased by US\$ 9,000 and US\$ 6,000, respectively. |
|--|--|

| | |
|--|---|
| <p>8. Improve the section on Sustainability in term of economic and financial aspects; and</p> | <p><u>GOI Contribution</u></p> <ul style="list-style-type: none"> • Increased by US\$ 76,100 on project costs but decreased by US\$ 85,186 on management costs (the original management costs were in-correctly calculated) • The increase was on Personnel (US\$ 37,200), Sub-contracts (US\$ 19,700), Duty-travel (US\$ 4,700) and Capital items (US\$ 10,500)\ <p>Therefore, the total budget is now US\$ 872,032 comprising ITTO Contribution US\$ 537,095 and GOI Contribution US\$ 334,937. The revised budget is presented in Tables 3.4.1 through 3.4.4.</p> <p>Sustainability aspect has been improved in Sub-section 3.5.2.</p> |
|--|---|